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News

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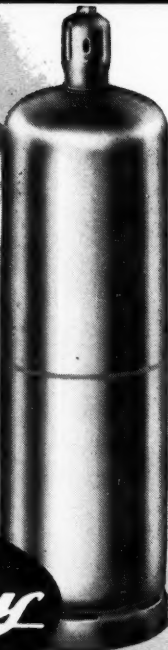
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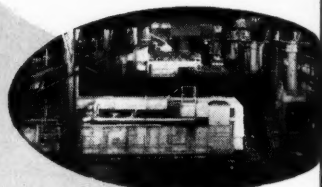




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BUTANE-PROPANE



News

FEBRUARY, 1951

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Letters

Gentlemen:

We have bought a new G.M.C. 450 model that we have changed over to propane. We don't seem to be getting the power we should have. We haven't planed the head because we can't seem to find out how much to take off. Some have told us that it has high enough compression as it is. So we are at a loss on what to do.

R.B.

Colorado

If you have not already done so, you should remove all exhaust heat from the intake manifold, either by blocking off the heat passages with a sheet of Swedish or stainless steel, or by replacing the intake manifold with a special unheated LP-Gas manifold.

Ignition timing may be insufficiently advanced for LP-Gas. You should check it as indicated in the article entitled "How to Win Power and Influence Economy" in the January, 1950, issue of BUTANE-PROPANE News.

These changes, in addition to high altitude pistons, should result in a considerable increase in power, as well as very satisfactory fuel economy.—Ed.

Gentlemen:

We want to put a cotton gin on LPG and would like to know if we can get by without a vaporizer. LPG consumption will be from 50 to 75 gallons per hour.

(1) Will a 2500-gallon aboveground tank vaporize this amount of LPG when outside temperature is 70°F? If not how about propane?

(2) If one 2500-gallon tank will not do the job, how about two such tanks?

J.W.M.

Texas

We believe the most satisfactory results will be obtained by using a vaporizer. If the

gin is operated 8 hours per day, a 2500-gallon tank may give satisfactory service if it is kept at least half full of propane and the temperature does not drop below 70°F.

Butane will not give satisfactory service as its vapor pressure will soon drop too low, and secondly, a selective vaporization takes place in the tank—the propane vapors coming out in greater concentration than the butane, causing a build-up of butane in the remaining liquid. The concentration of butane soon builds up in the tank and the vapor pressure fails.—Ed.

Gentlemen:

We are having trouble with propane gas in the 25-gallon cylinders and 150-gallon tanks. When it is cold it will not burn. Is it possible we are not getting propane from our distributors as we have been in business about 10 years and this is the first trouble of this kind we have had.

We have cylinders sitting alongside of houses and every morning when it is cold the fuel will not burn. Is there anything we can get to mix with this gas to keep it from freezing? The temperature for this year has not been under 30°.

H.E.

Mississippi

Apparently there is an accumulation of the heavier high boiling point butanes, pentanes, and even oil in the tanks and cylinders with which you are having trouble.

When vapors are continually drawn from a tank, any small percentage of heavy ends such as butane, pentanes, odorants, and oil from compressors and pumps does not leave

• BUTANE-PROPANE News welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed by them.—Editor.

with the vapors in the same ratio as they are found in the liquid. The lower boiling point liquid, propane, leaves first. Over a long period of time these ends will accumulate and eventually raise the boiling point so that poor results are obtained.

We suggest you take some of the worst offenders out of service, empty them, and clean them out good. Then fill them with fresh fuel and see the results improve.—Ed.

Gentlemen:

How many pounds of propane would be used in a circulating heater of 50,000 Btu capacity in 24 hours if said appliance was running wide open?

H.A.S.

Alberta, Canada

One pound propane contains approximately 21,600 Btu. Then
50,000 Btu/hr. x 24 hrs.

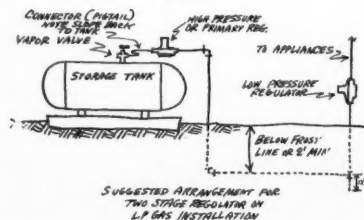
————— = 55.5 lbs. of propane
21,600 Btu/lb.
would be used in 24 hours.

We assume the 50,000 Btu rate of the heater is the input rate.—Ed.

Gentlemen:

We are experiencing a great deal of trouble in using aboveground propane tanks with the regulator freezing in the high pressure side, even though we do use commercial propane. We have overcome some of this trouble by putting alcohol in the fuel. However, the freezing continues to be a source of trouble.

Suggested arrangement for 2-stage regulator system.



We understand that using a high pressure regulator on the storage tank, and installing a low pressure regulator at the house will eliminate this trouble. If this is correct, will you recommend to us a suitable high pressure regulator and tail pipes to be used in a regular line valve? Most of our installations are made in homes that have three to five appliances.

E.R.M.

Louisiana

There is no assurance that a high pressure regulator on the storage tank will eliminate regulator freezing troubles, but many dealers in the LP-Gas industry have found 2-stage regulation helpful in reducing freezing troubles.

High pressure regulators can be installed at the tank. They can be obtained with POL connections on the inlet side. Adapters can be purchased to convert the POL connection on your standard low pressure regulators for standard pipe thread.

The "pigtail" connector between the tank valve and the inlet to the regulator is installed so that there is a gradual slope toward the tank valve. This slope should be continuous; that is, there should be no pockets or restrictions to prevent condensate from flowing back to the tank. A drip in the intermediate pressure line just ahead of the low pressure regulator provides a place for condensate to accumulate instead of entering the regulator body.

Consult your regulator manufacturer to ascertain the capacity of the low pressure regulator which you use. The reduced pressure from the primary regulator will reduce the capacity of the low pressure regulator and may cause it to deliver low pressure to the appliances.—Ed.

Gentlemen:

In this small town we have a cheese factory that takes raw milk from surrounding farms and processes it into cheese. One operation of the plant is to take the whey (a by-product of the cheese making process in liquid form) and dry it into a powder or granular form, sack it and sell it to feed companies.

The present dryer uses steam from the main boiler and as the water here is hard and forms lime and other

deposits in all pipes and parts of the machinery, they have a lot of trouble, with the dryer especially.

Would like to know if any manufacturer of equipment of this type makes a dryer that uses hot air instead of steam so they could get away from using water with the dryer. The dried whey is not used for human consumption.

G.E.M.

Illinois

We have no information on driers using hot air to evaporate whey. We do know that this is a standard practice of evaporating concentrated liquid soap solutions to produce granulated soaps and detergents in that industry.

In these evaporators, a large volume of air is heated. Air is introduced into a large tower and the soap solution is sprayed into this stream at the top. Some are designed so the soap and hot air travel in the same direction, while others are designed for the air to flow upwards while the soap descends. The heat balance is so calculated that the soap is completely dry when it reaches the bottom of the tower and the air, laden with moisture, leaves the tower at 200° to 300°F.

The soap powder is removed on a conveyor directly to the packaging machines. We believe this could be applied to the drying of whey.

It would require the services of an experienced engineer to design such a unit to suit the particular needs of your problem.—Ed.

Gentlemen:

We are building a new manufacturing plant where we will have need of some propane for running gas drying ovens and other equipment. This, however, will be in small quantities.

We will also operate several steam boilers at the plant for process steam and we wonder whether propane would be competitive with No. 5 fuel oil for this use.

C.P.B.

Illinois

No. 5 fuel oil has a heating value of 145,000 to 150,000 Btu's per gallon. The combustion efficiency of fuel oil in a boiler is good and on a par with gas. The heating value of propane is about 92,000 to 93,000 Btu's per gallon.

Following are some break-even prices of propane and No. 5 fuel oil on boilers:

Cost of Propane per gallon—cents	Cost of Oil per gallon—cents
6	3.8
8	5.1
10	6.4
12	7.7
14	8.9

Approximately 1 cent should be added to the cost of the oil to cover labor charges for unloading, burner maintenance, cleaning, oil heating, pumping, steam for atomization and burner maintenance. Not over ½ cent need to be added to cover unloading charges and vaporization heat. There are no other pumping, burner maintenance, atomization, and similar charges for propane.—Ed.

Gentlemen:

We would like to know your suggestion on the conversion of a 1950 Buick and 1950 Cadillac cars to the use of butane-propane gases. Should we get high compression heads and manifolds? This Buick is the biggest one they make.

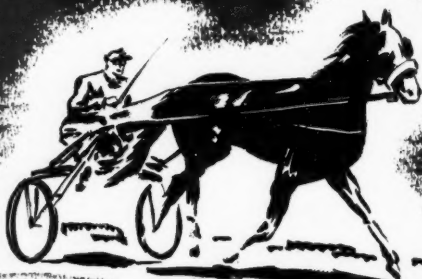
H.E.

Mississippi

If the 1950 Buick has the dynaflo drive, the factory compression ratio should be 7.2:1. You can check this by the serial number on the engine block. If the serial number is followed by a letter, it is the above ratio. If no letter appears, the ratio is 6.9:1. The 7.2:1 head is preferable with LP-Gas. The two heads are identical except that the lower surface of the 7.2:1 head is milled about .025 in. deeper than in the 6.9:1 head.

We have not been able to locate any cold manifolds for the '50 Buicks, so you will probably need to fit a thin plate of stainless steel between the intake and exhaust manifolds to prevent the flow of exhaust gas through the intake manifold hot box. The heat control valve should be anchored in the close position.

Treatment of the '50 Cadillac would be basically the same as for the Buick. In fitting steel plates into this job to cut off the heat flow, we would suggest using 1/16-in. stock. Cut them to the shape of the holes in the manifold, but slightly larger, then file the edges to a bevel, and chamfer the edges of the hole in the manifold so the plate will be flush. In this way, the manifold will seat evenly and the gasket need not be cut. Do not forget to anchor the heat deflector valve in the closed position.—Ed.



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"ALL-CUT" has been announced as the keynote phrase for the United States for 1951—and probably for many years to come. Price controls appear inevitable, as do wage controls, mandatory allocation of vital materials—including fuels, of course—and services, and a broadening of the already-broad national tax program. This latter revenue effort will concentrate on personal incomes, through income tax boosts and new excise taxes on such a sweeping scale as to amount to a national sales tax.

But although President Truman's "State of the Union" address and the present Internationalist vs. Isolationist debating session among U. S. statesmen, past and present, join the tenor of the international crisis in making 1951 seem to be just a recurrence of the nightmare of the early 40's—there is a difference.

This time, Uncle Sam's sleeve-rolling job won't be so confused and so difficult. The reason: The U. S. is 10 years and one world war advanced in mass production techniques, in facilities, and in capacity. The problems of converting to the output of military goods are NOT the problems that they were in 1940; and we have at

least a right to hope that the same garbled efforts at coordination and regulation of industrial effort won't be repeated this time.

The gas appliance industry is an instance that helps prove the point. In his year-end review of the industry's activities, GAMA president Frederic O. Hess said that gas appliance makers have "more than double the facilities, the manpower, and the productive capacity" that they had at the start of World War II. GAMA's members are therefore able to make "double the defense contribution," Mr. Hess said.

LP-Gasmen are likewise better prepared in every way to meet the obligations that are inherent for all industries in time of national emergency. Techniques and technical knowledge have raced forward in the last 10 years, apace of the tremendous growth we have enjoyed. We know much more about our product and how it can be used than was even suspected in 1940. In the all-out economy that faces us, there is a terrific job for LP-Gas—and LP-Gasmen—to do. It is heart-warming to know we are prepared to do it.

How? Well, as two examples of recent industry development, we can cite the current boom in the use of LP-Gas as a fuel for internal combustion engines and the research, largely successful, into possibilities of large-volume storage of butane and

propane underground. LP-Gas-powered vehicles, with higher efficiency and superior maintenance records, will ease the burden of critical gasoline shortage, as it will undoubtedly arise. The value of underground storage of a vast gallonage of LP-Gas is obvious when we look forward to the imminent demands upon all of the fuels in the nation as we make ready to resist the aggression that may come.

It is also wholesome and admirable to note the speed with which the industry associations have offered their services to the national effort. We look for close cooperation of association leaders with the Petroleum Administration for Defense in helping regulatory agencies understand the particular problems and nature of the liquefied petroleum gas industry.

To this end, both LPGA and NBPA are making certain that proper representation of the industry is maintained in Washington. NBPA's national affairs committee met in Washington last month; and LPGA's Vice President Howard White is in the nation's capital now.

This time, it's different. This time, the LP-Gas industry is Big Business, with big business ability to assume a large share of the industrial effort designed to help keep us free.

Before all of us are fully immersed in the job of making 1951 another banner year, all industry members have earned the right to sit back and be amazed at what has been accomplished in LP-Gas enterprise in the past few years.

As reported in BUTANE-PROPANE News for January by Phillips Petroleum Co.'s Kenneth Rugh and George Benz, the totals of LP-Gas consumption in 1950 are truly amazing. One hundred thousand tractor conversions!

More than 3½ billion gallons used! To the 20-year veterans of the industry, who started operating when LP-Gas was a "mysterious" gas, relatively unknown as a fuel, the figures are really staggering.

It has only been recently that the almost unlimited expansion possible has been realized. And with the national promotional program in its second year of aggressive, thorough selling, only the national emergency can keep the industry from erasing even 1950's sky-high LP-Gas business level.

This year marks the 50th anniversary of the National Bureau of Standards, highest authority in the nation in physics, chemistry, mathematics, and engineering. The bureau is to be congratulated on its wide program, past and present, of contributing expert information to those throughout the U.S. who are concerned with scientific and technical matters.

"Don't take a loss on labor" is a recent admonishment in an industry publication.

There is a growing tendency, it is stated, to undercharge on plumbing work and other jobs connected with installation of appliances. No longer can a dealer charge only \$3 an hour for a job when his union serviceman is being paid as much as \$2.25 per hour. Deduct social security tax, unemployment insurance tax, worker's compensation and public liability insurance, and overhead, and the job has been a loss—which must be made up from sales of materials.

Be sure that you figure in all these hidden costs of a job before you set the installation fee—undercharging for installation work is like hiring inefficient labor because it's cheaper—you pay the bill for it eventually.

Comment

WITH every state legislature in the Union meeting in regular or special session this year, industry men will do well to keep their ears open and watch for the introduction of new bills affecting LP-Gas distribution.

When you see or hear of any proposed legislation that is unfair to LP-Gas operations, notify your state association or one of the national associations. They will provide needed help.

Severe weather, which came early and stayed on steadily, brought about a critical-though-temporary shortage of LP-Gas for househeating in the Chicago area early last month. Other localities felt the bind also.

Suppliers will have a hard time catching up with demand as long as the extreme cold continues, it is believed, and there is a possibility that critically short supply may extend throughout the winter season.

The Chicago Tribune reported that some dealers were refusing to deliver LP-Gas for home-heating to new homes in Chicago's suburbs and that others were rationing gas among their customers of long standing.

LPGA, analyzing the shortage in Chicago and in other areas, listed the increased military use of tank cars as a major factor in the short supply, together with diversion of cars and butane to the synthetic rubber industry, the switchmen's strike, unprecedented cold weather spells, customer failure to enter the cold periods with storage tanks full, and a larger househeating load without a corresponding increase of customer storage

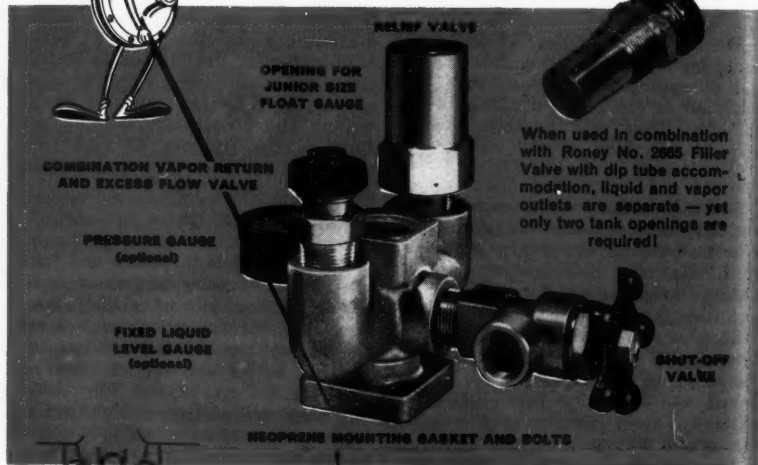
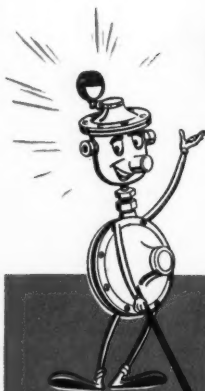
facilities. As a method of alleviation of the situation, LPGA asked the American Assn. of Railroads to paint the domes of LP-Gas tank cars white, and to attach priority orders to them in order that they be speeded to their destinations in the critical zones. (Concurrently, the Minnesota Petroleum Gas Assn. passed a similar resolution.) LPGA also appealed to all dealers and distributors to cooperate fully in the transfer of fuel from well-supplied areas to those where hardship is being felt.

Appliance manufacturers and their advertising agencies, aggressively involved in the job of selling more ranges, refrigerators, water heaters, heating equipment, and clothes dryers, had better not put all their advertising dollars in the TV basket, in the opinion of Capper Publications Inc., farm magazine publisher. Not if they're interested in the U.S. rural market.

Capper's Victor Hawkins, director of research, warns such advertisers that only 2.8% of the 13,000,000 top-income farm families own or are in range of television (i.e. they don't live near Cleveland, Detroit, Chicago, or any of the big cities that have television stations). Mr. Hawkins will send BUTANE-PROPANE News readers a free copy of the color map of television in the U.S. on which he bases his argument that TV doesn't mean a thing to farmers—address him at Capper's Publications Inc., 912 Kansas Ave., Topeka, Kan.

By Ed.

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YOU BENEFIT FROM: (1) greater protection against leakage; (2) greatly simplified field service because all valves are individually replaceable without removing the entire head; (3) greater safety because all vapor outlets are separate from liquid filling and withdrawal opening; (4) easier, more economical installation for fabricators; (5) Underwriters' Laboratories Inc. flow rated and tested.

1511 WEST FLORENCE, INGLEWOOD, CALIFORNIA • 105 GOLF STREET, DALLAS, TEXAS

IN making rice ready for the commercial market, no phase of the refining is more important than that of drying it. The speed with which it is dried and the controllability of the drying fuel (improper speed or intensity makes it brittle) directly affect the market price of rice.

The accompanying article tells how one rice processor has developed a satisfactory drying system—and, simultaneously, has helped open a brand new market for LP-Gas.

RICE DRYER - A BONANZA FOR FUEL SUPPLIER

ONE of the largest LP-Gas burner installations in the West went into operation near Fairfield, Calif., at the beginning of the last rice harvesting season, when the new 3-G rice dryer and elevator was opened for service.

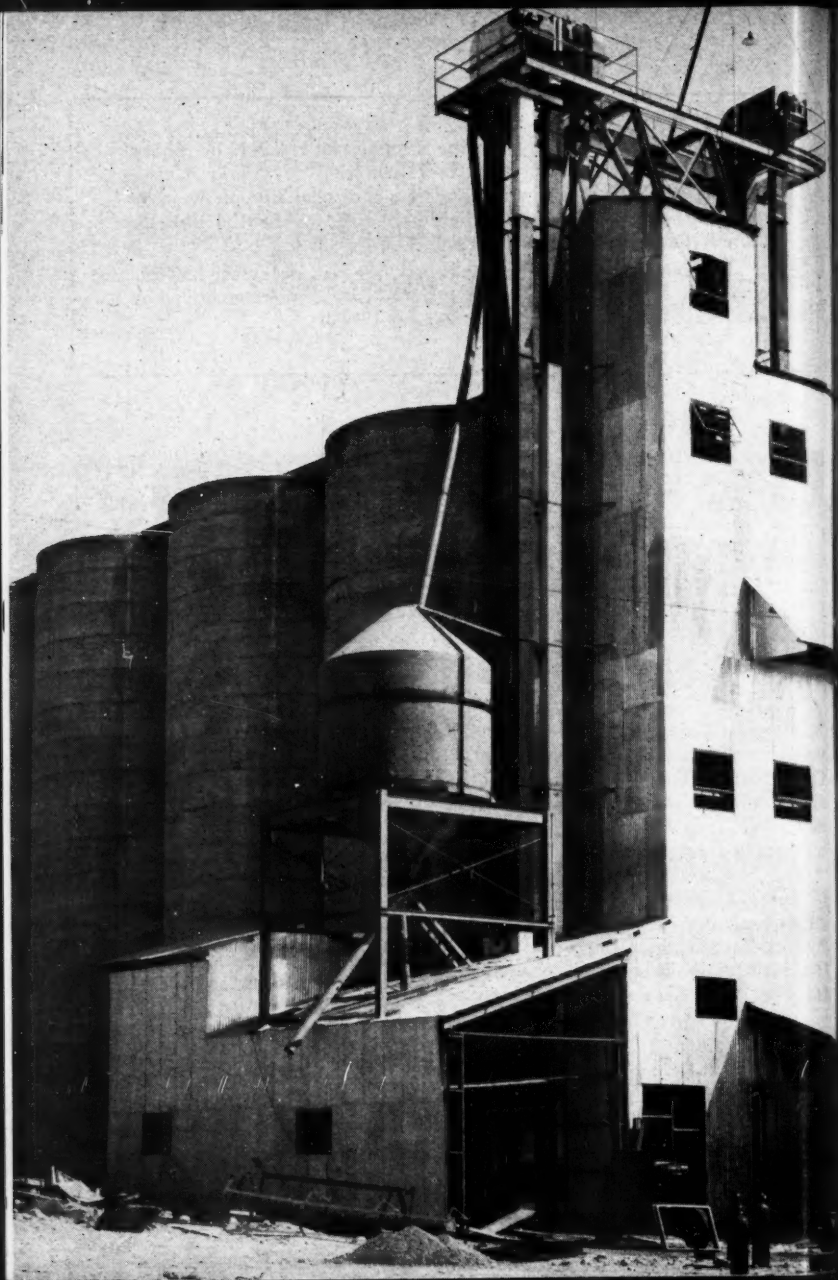
This tremendous plant, unique in many respects, will consume 48 gallons of fuel per hour when operating at full capacity. It is one of the numerous industrial activities fathered by G. G. Guiberson, widely known producer of oil well tools, machine tools, and aircraft engines.

The new 3-G rice dryer and elevator occupies the site of the former Pacific Portland Cement Co. plant about seven miles east of Fairfield. This plant was abandoned

By CARL ABELL

in 1925, and in order to save taxes all buildings and facilities were demolished except the tankage. Demolition of the heavily reinforced concrete cylinders would have been a terrifically expensive undertaking, so they remained standing, idle all these years because of their remoteness and because nobody happened to think of a practical use for them.

The tanks consisted of 15 contiguous cylinders 20 by 60 feet—five tanks in three rows. The cylinders are joined where they come together, making eight additional



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Elevator, dryer, and 25-ton loading hopper.

smaller tanks in the interstices. Heavily reinforced so they would withstand the side pressure of the cement, for which they were originally used, they are ideally suited for the storage of grain. The total tank capacity is slightly over 250,000 bushels. Reproduction of these tanks at present costs would have called for an expenditure of more than \$500,000.

The dryer is built into the elevator tower. It consists of a 40-foot multiple baffle drying unit, which passes the rice slowly by gravity through an ascending column of heated air. This is supplied by a pair of sirocco-type blowers, taking the heat from four Ransome Model B. U. S. 12 self-vaporizing liquid type burners 12 inches in diameter. Fuel consumption reaches a maximum of 12 gallons per hour in each burner when operating at full capacity.

Precision Heat Control

Since the drying of rice requires accurate temperature control within a narrow range, this dehydrator is equipped with Minneapolis-Honeywell thermostatic regulators within the drying tower. Each burner has two fuel valves, both electrically operated. The primary valve is set to produce a constant flame sufficient for the minimum heat requirements. The high heat valve is operated by a solenoid which responds to the thermostatic control

and provides the desired amount of additional heat.

The burner setup includes an electronic "Protectorrelay" system which affords 100% shutoff for both the pilot flame and the burner (1) in case the pilot goes out, (2) in case the electric current fails, (3) if for any reason the blower stops working. The burners are also interconnected with the blower circuit so ignition cannot take place until the blower reaches such speed that any accumulated gas which might have leaked out has been dissipated.

Prevailing Winds a Factor

The LP-Gas is supplied from a 10,000-gallon tank about 150 feet from the burners, and located so the prevailing winds will carry away from the burners any fumes which escape during the filling of the tank.

The rice must be dried immediately after harvesting to prevent spoilage. The Oriental way was to dry it in the sun, which required a great deal of hand labor and involved the risk of wetting during inclement weather. The American mechanized methods are better in every way, and are considerably more certain and economical.

Our rice harvesting is done with a combined harvester. The loose grain is dropped into a bulk truck which parallels the harvester through the field. When filled, the truck rushes the rice to the dryer and dumps it into the intake hopper.

For highest quality grain it must be harvested when the moisture

content is between 20 and 27%. It must be put through the first stage of drying within 48 hours, or the mass of grain will start to heat and ferment. The moisture content must be reduced to below 14% for prolonged storage. The ideal moisture content for the subsequent operations of removing the hulls and polishing is between 12½% and 13%. For best results the drying must be accomplished in several successive steps, and these steps must be within certain time limits or fermentation results.

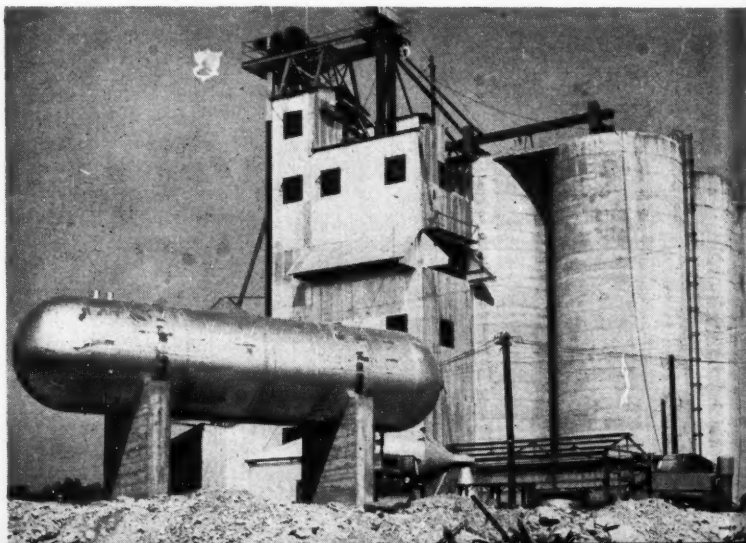
The drying begins, of course, on the outside of the grain. Exposure to too high temperature or too long exposure to heat makes the kernels brittle like melba toast, and if this

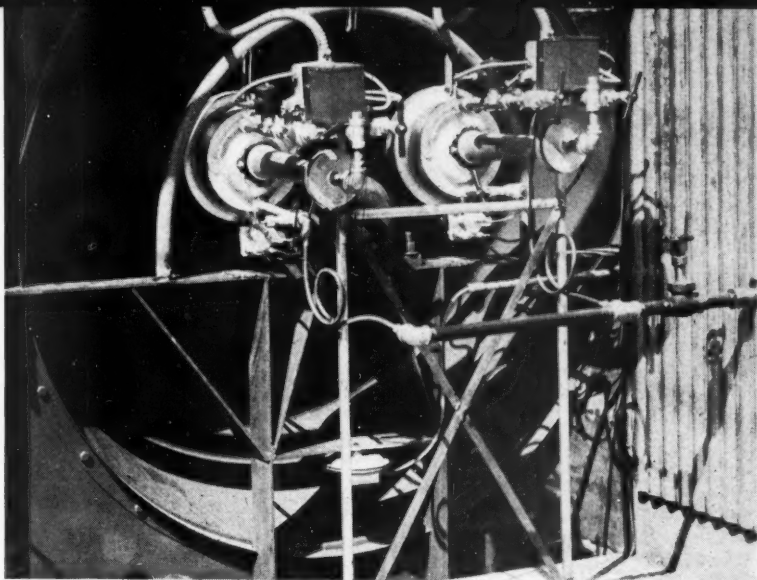
were permitted the milling operations would cause excessive breakage. Time must be allowed between the successive passes through the dryer for the moisture in the center to equalize throughout the grain, so the kernel will still be in good condition for milling when drying is complete.

No Job for an Amateur

Operation of a rice dryer is not a job for an amateur. He must know his rice, and he must keep every batch under close control, re-passing it through the dryer within the required time limit. If he slips up and allows a big tank of rice to start fermentation, the flavor is spoiled and it is useless for anything except brewing. This entails a terrific loss of market value and is therefore very serious. The modern rice dryer is operated from a

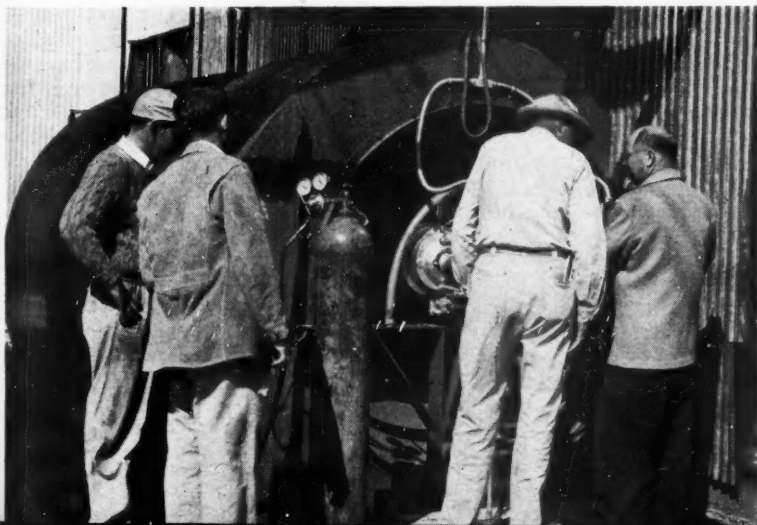
10,000-Gal. LP-Gas tank and 3-G rice dryer.





Two of the four 12-in. burners.

Testing the burners. Left to right: O. E. McCartney and Fred Joost, Bayles Joost Co.; Jess Parker, 3-G Rice Dryer and Dehydrator Co.; and Carl E. Golden, Ransome Co.



visible control board, which makes it possible to keep track of the progress of every batch, and put it through the dryer when it is due.*

The rice harvesting season is about two months long. The drying is complete in from 15 to 20 days, depending on the initial moisture content and the atmospheric humidity. After that it is necessary to run every tank of grain through the dryer periodically to offset the effects of absorption of atmospheric moisture.

From the outside, a rice drying and storage plant appears to be very simple. There is not much in sight but the tanks, elevator, dryer housing, and loading-out hopper. What is not visible from the ground is the labyrinth of conveyors both above and below the tanks. These are generally of the spiral, or "auger" type, and they are so placed that the grain may be withdrawn from any tank and put back in any other tank, or into the loading hopper for shipment to the rice mills. Mechanization is complete, and the entire plant is operated by brains and push buttons.

LP-Gas is the Ideal Fuel

LP-Gas makes the ideal fuel for such operations, because of its low cost and because the heat can be controlled instantly and accurately to meet the needs within the drying tower.

From the standpoint of the supplier of the fuel, the rice dryer is very desirable business. The volume is considerable. During most of the harvesting season, from mid-September well into November, opera-

tion is likely to be on a 24-hour-per-day basis. Depending on the weather, this particular dryer might require as much as 1000 gallons of fuel per day during the rush period.

Load Drops After November

The peak requirement is over by Thanksgiving, so it does not overlap the main heating load of the winter season. During the balance of the year, only an occasional load will be required, and the 10,000-gallon storage tank permits considerable flexibility on the delivery.

The 3-G rice dryer and elevator was designed and built by Bayles-Joost, of San Francisco, who have installed a great many grain dryers throughout the Western states. The burners used in this dryer were built by the Ransome Co., Emeryville, Calif., and installed under the direction of Carl E. Golden, gas engineer for that company.

*Since this article was written, the 3-G company has installed recording thermometers in each of the two drying columns. These instruments produce 24-hour dial records of the operating temperatures to which the rice is subjected.

Each batch of grain put through the dryer during that 24-hour period is plotted in its correct position on the dial record and is identified by the name of the owner.

This serves as a permanent record in case a question arises at any future time over the correctness of the treatment in the dryer.

8 Dealers Help Win Cold War In Minnesota

By ROBERT C. HORTON

WITH the help of a bulk plant, cooperatively owned and operated by eight central Minnesota dealers, rapid strides are being made toward the increased use of propane in the Little Falls area. So far, the surface has been only scratched.

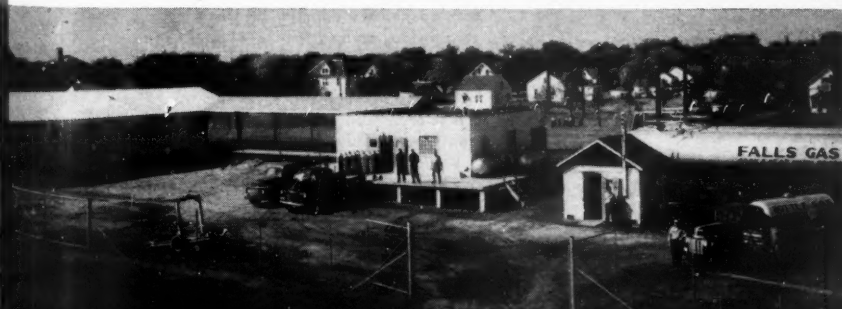
Against strong electric competition, these dealers have amassed a postwar record of steady growth. In this cold climate area, customers must have a steady, dependable fuel available at all times. Electric power line failures and lack of constant load have made it easier for propane to gain in popularity with housewives and commercial customers. They know they can depend on propane all year round.

Until 1947, central Minnesota dealers were supplied with propane by direct bulk purchase from tank cars. In that year, however, eight

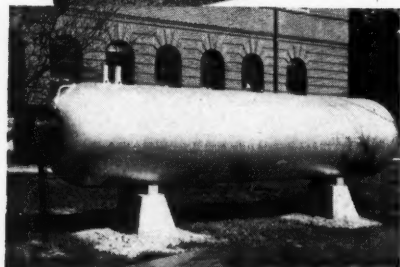
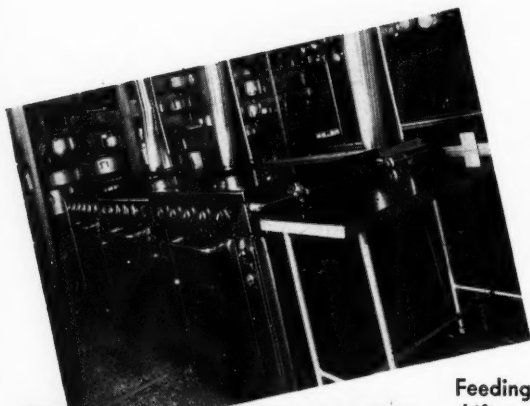
Eight dealers have made propane history in the Little Falls, Minn., territory. Here is their story and the case history of one of them, Blenker's Hardware and Furniture Co.

dealers—Henry J. Blenker, Albany; John Bares, Little Falls; T. A. Muotka, Bovey; Dick Parks, Nisswa; Hallis Bailey, Walker; R. J. Rudolph, Rice; Bill O'Donnell, Foley; and Mark and Carl Wenner, Cold Spring—decided to centralize their supply system and formed the Falls Gas Co. to build a bulk plant at Little Falls, Minn. The Phillips Petroleum Co. cooperated with the dealers in the

Falls Gas Co. bulk and bottling plant in Little Falls, Minn.



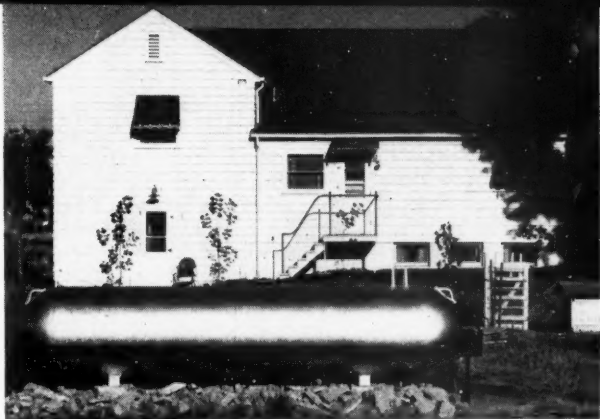
ST. JOHN'S UNIVERSITY SOLVES A PROBLEM



Feeding its students in laborious shifts, using inefficient oil stoves, St. John's had a definite problem. After a propane switch-over, engineered by Blenker's, the long cooking days were over for St. John's. Today they can feed as many as 1500 students at a time, or 4500 in one day. Above is a unit of three South Bend ranges in the St. John's kitchen. At left is the 1000-gal. Butler tank that provides fuel for the kitchen ranges.



The success of the kitchen installation opened the door for Blenker's to provide another service at St. John's. The university was sold on the advisability of using propane for the student snack shop and the science laboratories. Two 115-gal. Pressed Steel tanks (at left) now handle these jobs.



Fred Blenker, president of Falls Gas Co., lives as he sells. His home is a model of all-gas living. He heats, cooks, freezes, and dries the family wash with propane. Potential customers, dependent on electric power, are convinced after a friendly visit. Above is the 1000-gal. tank installation in the rear of Mr. Blenker's new home.

design and construction of this plant. Now, they, as well as non-member dealers take their bottles to the plant, which has a present capacity of 36,000 gals.—an additional 30,000-gal. capacity will be added.

Dick Parks handles bulk deliveries for the company with a Ford tank truck fitted with a 1000-gal. Butler tank. The Falls Gas Co. is a member of the National Butane-Propane Assn. and the Minnesota LP-Gas Assn.

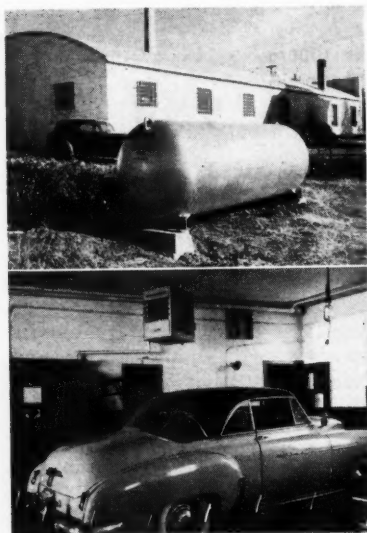
Typical of the dealerships that operate in the area is that of Henry J. Blenker, head of Blenker's Hardware & Furniture Co. Mr. Blenker, like so many LP-Gasmen in rural Minnesota, started carrying propane and LP-Gas equipment as a sideline to his steadier hard-

ware and furniture market. As the postwar years rolled on, however, the sideline became a mainline, to the point where he turned over the entire LP-Gas operation to his son, Fred.

Under Fred's supervision, the propane market continued its speedy growth, with both bottle and bulk customers joining the customer roster. One of the most interesting bulk customers is St. John's University in Collegeville. The university solved its big cooking problem with the installation of six South Bend stainless steel propane cooking ranges, fueled by a 1000-gal. tank. After the switchover (oil stoves had been used before), the university was able to abandon its wearying "shift system" of feeding students.

Another interesting commercial application of propane is on the premises of another Blenker customer, Gretsh Chevrolet garage, in Albany. The bitter cold of Minnesota winters is closed out of the Gretsh working area by propane-fueled Reznor overhead heating units. These unit are supplied with a 1000-gal. tank.

Fred Blenker isn't a man to preach one thing and practice another: his own home, built recently, is a model of all-gas living. His 1000-gal. Butler tank supplies a



Another application of the fuel by Blenker's. Reznor overhead heating units were installed in Gretsh's garage in Albany. Above is the 1000-gal. A. O. Smith tank that fuels them.

Servel refrigerator, Tappan range, Hamilton gas-fired clothes dryer, Servel water heater, and a 150,000-Btu Mohawk hot-air furnace. And every potential propane customer on Fred Blenker's prospect list has been shown this home—and the advantages of the LP-Gas appliances.

Blenker's business success and bright prospects for the future are the indicator of where LP-Gas is going in Minnesota. It's going up in sales, up in volume, up in acceptance. If the present rate of growth is extended — and there seems to be no reason why it will not be extended—the state may become one of the industry's major strongholds in the battle to prove superiority of LP-Gas over other fuels.

U. S. Rubber Will Double Plant's Rubber Production

United States Rubber Co. has announced the purchase of the Buna-N synthetic rubber plant of Esso Standard Oil Co. in Baton Rouge, La., as a major step in the expansion of its facilities for the manufacture of chemicals, plastics and synthetic rubbers.

The plant will be operated by the Naugatuck chemical division of the rubber company which will continue to market Buna-N rubber under the trade name paracril.

The plant now has the capacity to produce approximately 15,000,000 pounds of Buna-N synthetic rubber and high styrene latex annually.

U. S. Rubber plans to expand production facilities so that the plant will manufacture more than 30,000,000 pounds of Buna-N synthetic rubber, high styrene latex, and the new rubber-plastic blends annually.

If You Want to Build Load, Don't Overlook *Small Industrial Applications*

Tour industrial Los Angeles with Jack Griffith, sales manager of Mutual Liquid Gas, and discover how a top-flight LP-Gas evangelist gains converts solving the problems of management and of the individual worker. Mutual's customers include a wide cross-section of industry—from huge public utilities to the one-man plumbing shop around the corner. Its success in building a year-round industrial load is based on a multitude of small applications of the fuel.

LP-GAS can walk right into an industrial area already well supplied with other fuels and come out on top. That's been the experience of many an LP-Gas dealer who took industrial accounts seriously and wasn't discouraged just because some of his residential customers converted to natural gas as mains were extended.

It's the industrial customer—big or little—who can build the steady year-round load.

But the industrial customer has to be sold. And once sold, he has to

Tom Cooter, sheet metal worker at Krieger Sheet Metal Contractors, Los Angeles, using a portable furnace. The fact that two standard soldering irons can be heated in about two minutes sells LP-Gas.





be kept happy. Personalized service is the only way.

Let's go on an LP-Gas tour around industrial Los Angeles—where industry-wise dealers have many a satisfied customer who knows how to handle LP-Gas and appreciates its faster heating qualities.

In southern California alone there are some 8000 plumbers—8000 potential LP-Gas users. In your own town there are probably three plumbers to every sheet metal shop—but both the plumbing industry and sheet metal fabricators have daily need for LP-Gas, to heat irons, to bring metal up to desired

Another application is the burning of excess industrial gases to speed combustion and help eliminate smog and smoke over Los Angeles. Here is a special pipe arrangement for insertion of an LP-Gas torch into cupola air vents.

temperatures, to melt lead caulking.

Take Krieger Sheet Metal Contractors, for instance—a medium-sized sheet metal outfit in Los Angeles that manufactures fire doors from 24 and 26 gage sheet metal. The shop uses 200 pounds of solder—50/50 and 40/60—weekly. And that requires a lot of hot irons and 8 to 10 sheet metal furnaces, plus cylinders. This is a job which competitive fuels could

By JAMES JOSEPH

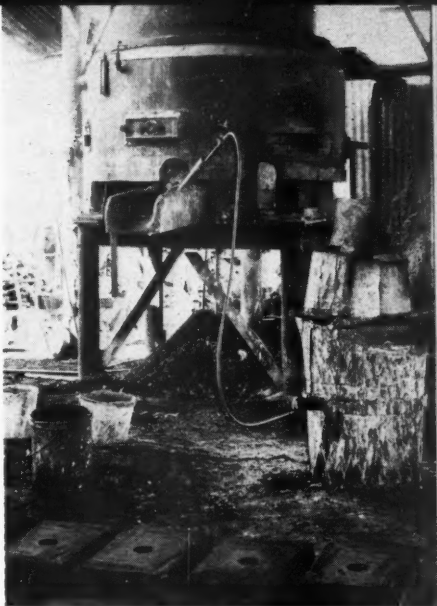
have sold, but the point is that LP-Gas got there first, and stayed. The reason was service and LP-Gas efficiency. Sheet metal fabricators at Krieger's will tell you why.

"I like the portability of these furnaces," one sheet metal worker said, "and LP-Gas gets the irons hot faster." That's important—and a real sales point—getting the iron hot quicker. When you're using a soldering iron continually, the faster it heats up after cooling, the quicker you get the job done. A standard LP-Gas-fueled sheet metal furnace—or a tinner's furnace—can heat two irons in about 2 minutes. That means shop efficiency.

Portability is another sales point. A small 6-lb. cylinder mounted on wheels can be a convenient arrangement. Any length of hose can be used, and on some models a lead pot can also be placed on top of the burner. One model will melt an 8-inch pot of lead in just 12 minutes.

But the industrial customer, besides desiring efficiency—and who doesn't—demands service. And they're willing to pay a little more for service. Empty cylinders—servicemen who neglect checking each customer weekly—is a sure way to force industrial users to switch to competitive fuels.

Krieger isn't much different from many another sheet metal shop in your own town. A small user perhaps, but steady, and when dollars and cents and gallons delivered are added up, you'll find that a big list of industrial customers totals more LP-Gas gallonage than a like number of residents.



Imperial Cast Iron Foundry Co., Los Angeles, is a big LP-Gas user. Here four torches are inserted in air vents of an 8-ton cupola. In the foreground ladles are heated to 1250°F in an unusual way—they are inverted over a barrel, and an LP-Gas-fueled torch inserted.

Mutual Liquid Gas and Equipment Co., Inc., Los Angeles, has thousands of small, regular industrial customers. It knows, for instance, that there are limitations to LP-Gas—especially with gas mains near at hand—but it also knows that almost every industry needs and can use at least some LP-Gas equipment—furnaces, melting pots, torches, and special equipment.

In small shops—sheet metal,



Light and power companies use LP-Gas for cable splicing, soldering seams on cable sleeves, metal caulking, and for heaters in pole-repair tents.

plumbing, electrical—it's especially important to sell each individual workman. A dissatisfied workman in a small shop can influence the owner to discard his LP-Gas equipment. Let's watch Jack Griffith, sales manager for Mutual Liquid Gas, as he visits his industrial customers. Jack knows most of them by their first names. He tries to make LP-Gas fit into each industry—if a customer needs a special installation, Jack studies the problem, tries to fit LP-Gas into the industrial need. This means a thorough study of the industrial application, itself—and oftentimes

means acquiring basic knowledge of the industry.

While we were taking photos, Jack quietly inspected standby storage tanks for one industry. When we left, he had an order for 1500 gallons of propane. He was on his toes—always exploring the possibility of industrial needs. That customer might well have procrastinated until a winter shortage swept down, then he'd complain that his LP-Gas dealer just wasn't giving proper service!

At one sheet metal shop a tinsmith complained that LP-Gas didn't do the job, that personally he was afraid of LP-Gas. Another salesman might have popped insurance statistics—and have been statistically correct. But that's not the way Griffith does it. He's an LP-Gas evangelist. You've got to convince by demonstration—on the spot. Jack looked over the man's burner, found the trouble to be a dirty burner which just wasn't taking air properly. He promised to send out a new burner unit, and took time to show his customer how to light the burner and how to adjust it. The tinsmith admitted he'd been doing it incorrectly—but was afraid to experiment. That's one way to stop LP-Gas sabotage among workers in your customer's plant.

At another installation—this time growing mushrooms commercially, and in the heart of the industrial district—we found that LP-Gas heaters which the grower had used to warm his houses when temperatures fell below 50-60° F, had been discarded. The grower hadn't found a better fuel, but

was looking around, and cutting corners on costs, willing to take a hackneyed unit. It seems he'd forgotten to turn the burners off and when someone opened the tightly sealed mushroom house doors the gas had gone up in a minor explosion, igniting from a nearby burner. Jack sat down and designed a burner arrangement on the spot. But the grower still wasn't convinced—said he'd look around a bit longer.

"He'll be back again this winter," Jack said, "when we're rushed. But we'll service him and he'll be a steady customer. When they come hard, they're the best and most convinced customers."

Smog control and the burning of excess industrial gases is another new use for LP-Gas burners and torches. Poor combustion is the main cause for smog and smoke. Industrial smog over cities is a growing social menace—and one of the offenders is the foundry. Some foundries have found that by inserting an LP-Gas torch in their cupolas, they can burn ex-

cess gases—have better combustion—and thus eliminate air pollution.

One foundry, Los Angeles' Imperial Cast Iron Foundry Co., inserts four LP-Gas torches in the air vents of its 8-ton-an-hour cupola to help speed combustion. Torches are inserted by means of a pipe approximately the same diameter as the torch. Torches burn most of the day and use about 1000 - gallons of LP-Gas monthly—drawing from a 1000-gallon storage tank. The big cupola reaches a temperature of 2500° F. The torches, themselves, are specially designed for air-vent insertion.

This same foundry is a good example of unique LP-Gas use—how alert dealers can make more

Left: The instant heat of this furnace permits continuous line soldering. Center: This furnace will accommodate 2 12-lb. irons or 3 6-lb. irons. Right: Soldering an industrial gutter—one iron is heating while the hot iron is in use.



business and adapt LP-Gas to industry. One problem in almost any foundry is pre-heating of ladles used for metal transfer during pours. Ladles must be brought up to at least half the temperature of the molten metal—otherwise a reaction and a poor pour take place. Previously, this foundry had simply built a wood fire in a barrel, placed the ladles inverted on top, and pre-heated that way.

When LP-Gas salesman Griffith saw this obsolete and inefficient pre-heating method, something clicked. As it should with you on such occasions. He sold the foundry an additional torch, which is inserted in the barrel, requires no tending, and pre-heats faster and more efficiently. An application—perhaps small—which can be adapted to any foundry.

The paint industry has need for many torches—usually portable. Kettles must be burnt out, scale and paint removed. Painting contractors are another example of small load users—but again, when multiplied by the thousands of painting contractors who could use LP-Gas, the proportion is impressive. Jack Griffith believes that dealers who limit cylinder sales to big quantity holders are tying their own hands industrially.

Public utilities—light and power companies, and pipeline contractors—are big users of industrial LP-Gas equipment. For cable splicing, soldering seams on cable sleeves, for melting caulking, and as heaters in pole-repair tents. Utility companies have many crews out—usually two- or three-man crews—whose need for portable, light-

weight equipment is large. Ever notice those canvas pole-line repair tents? Maybe you don't realize it, but there's a potential for heaters.

It gets pretty cold trying to splice wires in those little tents—despite their wind-breakage. Mid-western power companies are turning to heaters to keep their men warm while on the job—and to up wintertime efficiency. Mutual Liquid Gas and Equipment Co.—among others—has a special portable heater made especially for the telephone aerial and ground tents—for construction and field shelters. A light-weight, 6-lb. cylinder and the portable heater—the heater weighs just 13 lbs. plus the weight of the cylinder—can make working conditions better and win friends for the industry.

The trucking industry might seem a hard nut to crack. In addition to LP-Gas fuel for engines there are other trucking applications. Big lines—interstate, and even locals—use torches in shops for electrical repair. These lines, many of them, have on-the-road maintenance bases far out and away from fuel sources. Many trucking companies are bothered wintertimes by frozen fuel lines. Quick application by a portable LP-Gas torch thaws out the line, sends the truck on its way.

These are some of LP-Gas salesman Jack Griffith's customers. In a single square mile of Los Angeles' industrial area, he has hundreds of customers—where less venturesome dealers fear to tread.

It's a challenge, this industrial sales opportunity, that, when multiplied, can mean new sales.

War-Time Controls For LP-Gas Men

Although The Economic Stabilization Agency warned manufacturers that undue price increases after Dec. 1 would be subject to ESA action at the earliest feasible time, the machinery for price and wage controls still has not been set up to do an overall job.

Controls are definitely coming though, and with them are expected rollbacks in prices wherever the consumer has felt large and sudden price increases that related obviously to the emergency situation. What constitutes unfair pricing in the eyes of ESA officials is set forth in Standards 19-a.

The NPA amendment to Construction Order M-4 continues in effect to Feb. 15. Under the order, all new construction of commercial buildings for storage, distribution, display, or sale of consumer goods, was banned. Some storage and warehousing and wholesale buildings are exempted from the order—including gas distribution systems.

Commercial building or repairs totaling less than \$5000 are not affected at all. After Feb. 15, an NPA license must be obtained for new commercial building; in general, license will be issued only for construction that furthers the defense effort, is essential to public welfare, or will alleviate or prevent a public hardship. Applications will be handled through regional offices in Boston, New York, Philadelphia, Cleveland, Chicago, Atlanta, St. Louis, Kansas City, Dallas, Denver, Minneapolis, Seattle, Los Angeles and San Francisco.

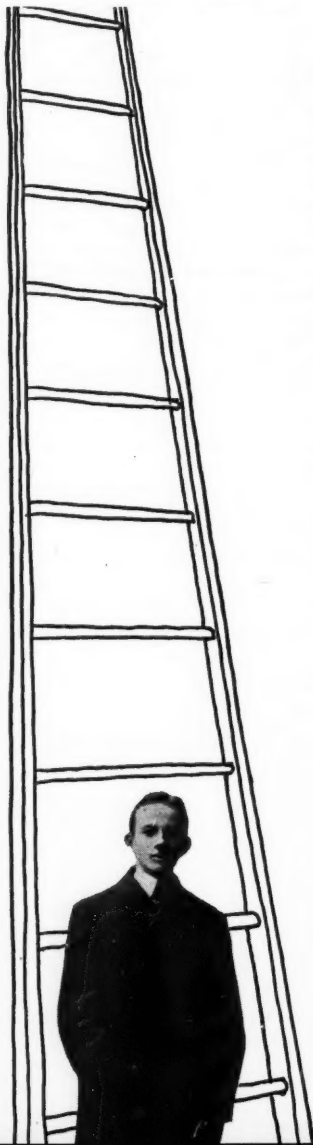
LPGA's vice president, Howard White, reports from Washington this month that while Amendment No. 1 to Department of Commerce Order M-12 (issued Dec. 30) exempts LP-Gas-installation type copper tubing from restrictions, a new amendment which may alter this ruling is in preparation.

Mr. White also reports that priority systems for civilian steel consumption are expected as soon as the administrative machinery is set up, as are mandatory price and wage freezes. He also noted that PAD cooperated well in attempts to alleviate the LP-Gas shortage that developed in certain areas last month. Bruce Brown, PAD chieftain, and Dene B. Hodges, in charge of all LP-Gas matters for PAD, acted quickly in asking suppliers to ship surpluses to critical zones and received pledges of cooperation in return. The American Assn. of Railroads has affirmed its support of plans aimed at getting LP-Gas tank cars to their destinations and unloaded as quickly as possible, Mr. White said.

What is believed to have been the first meeting called by a local civil defense administrator to form a plan of action by the LP-Gasmen in his area was held at Auburn, Maine, Dec. 14. Colonel J. Dennis Bruno, defense director of Androscoggin county, formed a committee of dealers in the area and received a promise of complete cooperation by all dealers with civil defense measures.

Secretary of the Interior Oscar L. Chapman announced last month the appointment of Richard G. Lawton, president of the Lawton Oil Corp., Magnolia, Ark., as director of the production division of Petroleum Administration for Defense.

A YOUNG MAN GOES TO WORK



SIXTEEN years of age, an inexperienced Brooklyn lad, with a sincere ambition for work, made application to the then one-man personnel department of Standard Oil Co. at 26 Broadway, New York City. Just seeking a job. No one then cared particularly that the boy's name was "Herb" Miller.

Employment applications then were relatively simple. In fact, young Miller was asked just one question and assigned two things to do, viz.: (1) the status of his health; (2) to add a column of figures; and (3) provide a specimen of his handwriting. These tests satisfactorily answered and performed, he was hired. Hired as office boy.

So proficient did he become as "general errand boy" that Walter C. Teagle, one of the great men to head Standard, chose young Miller as his confidential clerk, and later as his personal companion and confidential secretary, after he had completed a night course in secretarial training. As such, Miller accompanied Teagle on many of his trips abroad when he was selling kerosene and the Standard organization, itself, to the French, Dutch, Scandinavian countries, China and the Orient.

Yes, that was just after the turn of the century. Before the automobile was more than an oddity. Before crude oil was used for much but lamp fuel and axle grease. Many years before the airplane, and catalytic cracking and high octane gasolines, and the discovery of the proc-

At 18 years of age Herbert Miller was an errand boy at Standard.

BUTANE-PROPANE News

ess of separating the "three mules," butane, propane, and pentane, from natural gas gasoline, which laid the foundation of our modern LP-Gas industry. In fact, Herb Miller was sent to Tulsa in 1921—30 years ago—to be nearer the center of the tremendous oil production of Oklahoma and north Texas. Cushing was history. Burbank was coming into its own. Seminole was yet to make history. Andy Kerr had discovered some of the possibilities of butane. Frank Peterson had driven an automobile fueled with butane in New York City 10 years before. George Oberfell and others were experimenting with the extraction of butane and propane from casinghead gasoline by both the absorption and compression processes.

It would seem that "young" Miller, he was but 35 years of age then, had stepped right into the middle of things. He had, but he had come prepared. Trained in the meticulous way of doing things, doing them right. Working hard. Doing much listening and little talking. Observing thoroughly and storing the knowledge thus obtained.

So, Herb Miller established himself. And he received the award that American industry pays to young men who have the spirit and ability to learn and work.

Mr. Miller for years has been vice president of the Carter Oil Co. of Tulsa in charge of crude oil purchasing and LP-Gas production for sales.

Now he has retired—as of Feb. 1—after 48 years with Standard, and its affiliates, of which Carter is one.

Meanwhile, he has reared a family of four children and made many contributions in time and effort to the development of his home town, Tulsa, a community as closely identified with the oil industry as Herb Miller himself.



Today, Herbert Miller has retired from Standard after 48 years of service.

This might suggest that Herb Miller has attained a "ripe old age." No such thing. He is in the prime of an eventful and useful life. He is 65 years of age but looks, acts, and thinks as a man much younger. He has just reached a point where his experience and judgment are of the very best. Nevertheless, a system devised years ago by some "efficiency expert" decrees that employes of Standard and many other large firms, shall "retire" at 65.

Hence, it was arranged to have a "retirement" party when big and little folks of Carter Oil Co. and other subsidiaries of the Esso Standard Oil Co., New Jersey, and numerous friends, could wish Herb Miller "many more happy years."

We salute Herb Miller, therefore, as one of those who accepted his "job" both as a course of livelihood and as a day-to-day education in the worthwhile things of life, and has graduated *summa cum laude*.

—Keith Clevenger

CUSTOMERS



OK

METERS

Mr. King is an enthusiastic meter booster. Proofs of the pudding include lower costs, greater customer satisfaction and good will, increased fuel volume, and a simplified problem of storage.

BERT KING went to Twentynine Palms, Calif., in 1940. He opened a gasoline station and began to enjoy life in the sprawling little desert town.

Two years had hardly gone by when he found himself selling LP-Gas in cylinders to the ever-increasing population. It wasn't long until the LP-Gas end of his business rivaled the gasoline sales.

Mr. King knew a good thing when he saw it and in 1946 he said

goodbye to the gasoline tanks and opened up his LP-Gas business in earnest. Now Bert King is a full-time bulk plant operator with a large potential in the Twentynine Palms area.

Besides serving the outlying area—the company operates on a radius of about 25 miles—King's also sells fuel to the entire community.

This factor has made possible a new service for his customers—the operation of individual gas meters. In most cases one large tank—500 to 1000 gals.—is used for storage. Lines are run to a number of customers in the block and meters set in.

By PAUL LADY

The meter operation has worked well. It is possible to service customers cheaper and easier. Delivery to these large district tanks can be made when most convenient to the dealer. Meters are read once a month.

Mr. King is a strong booster for meters and has installed them on individual systems in many cases. He hopes to do more of this.

Some of the important advantages of meter use include:

1. Entire district serviced at one time.
2. Accounts-receivable cut down due to customer habit of monthly payment.
3. Customers trust meter reading and feel they are getting all the gas paid for.
4. More gas is used because customers know they don't have to fill and pay for large quantities in advance.
5. Dealer can use large tanks for

storage space when desirable, which is better than the high cost of plant storage. (King's customer storage is nearly 50,000 gals.)

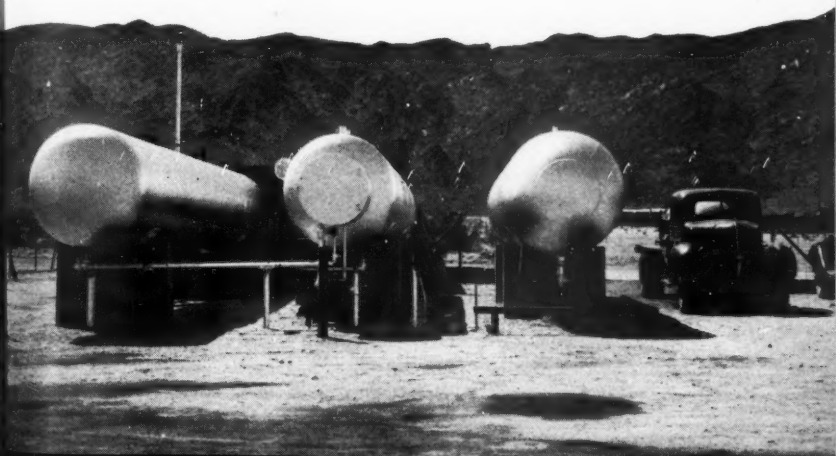
6. Elimination of pirating operations—other dealers can't fill and sell through another dealer's meter.

Mr. King has worked out an equitable and highly satisfactory system for meter operations.

A \$20 deposit is made by the customer when the meter is installed. (This is average cost of his meter installations.) The deposit is refundable to the customer over a period of five years, which keeps everybody happy and makes each job financially solvent for the company.

The minimum consumption cost is not less than \$2.50 per month. Also, the company reserves the right to furnish the size of tank that each customer needs for his service. Meters are sometimes used

The Bert King plant showing three storage tanks and bulk delivery and office.





One of the town storage units used for serving several customers. One user, a large drug store, is shown.

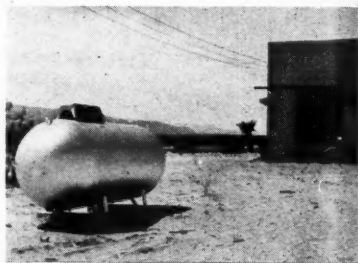
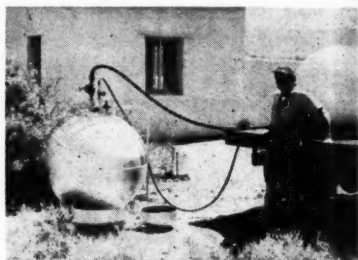
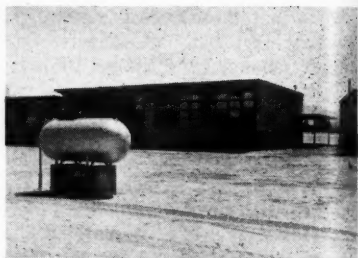
on a cylinder installation, if the consumption is large enough.

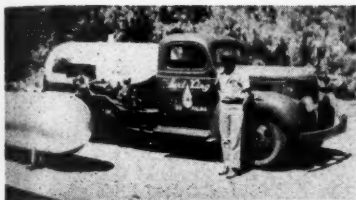
In time, Mr. King hopes to get meters in all localities. Those he has used so far have been mainly Pittsburgh Equitable, Model 00 meters. These have cubic-foot dial and can be read easily.

Most of the consumers' tanks furnished by Mr. King were built by Buehler Tank & Welding Works, Los Angeles, while the American Pipe & Steel Corp., Alhambra, Calif., manufactured the large bulk tanks.

Mr. King's operation includes

From top to bottom: Storage for 300-student school supplies six forced air "Janitrol" furnaces, several console space heaters, water heaters, and cooking equipment. Don King filling one storage for adobe cottages at Twenty-nine Palms. The 500-gal. Buehler tank used at printing plant of "Desert Trail," where gas is used for melting lead, space heating, and water heating. Bert King by his bulk delivery truck.





Filling storage for swimming pool at Twentynine Palms Inn. The inn uses LP-Gas for all cooking, water heating, heating pool, and some space heating. Tank is 300-gal. Buehler.

just about every type of installation. The major part of the business is domestic, but on the gas delivery lists can be found gas sales to a chemical plant, a gold mine, hotels, motor courts, schools, bakeries, a printing plant, and numerous ranches of all types. Several turkey and chicken ranches use King service for brooding.

His plant and equipment now comprise:

- 2 5000-gal. propane storage tanks.
- 1 4500-gal. butane storage tank.
- 1 500-gal. propane delivery tank truck.
- 1 Cylinder delivery truck.
- 1 Service truck.
- 1 Oil delivery truck.

The personnel of the King organization is pretty much a family affair. Besides Bert, the working force consists of his son, Chester; his brother, Dan, and his nephew, Hal.

This closely knit group handles sales, installations, and service for the company's 400 customers.

NFPA Inspection Manual Covers LP Gas Installations

The "NFPA Inspection Manual," pocket-size, 336 pages, edited by Horatio Bond, chief engineer, has been issued by the National Fire Protection Assn. for use in inspection work done for fire prevention and fire protection by property owners, fire departments and insurance men. It replaces the book "Field Practice" which has been out of print for some time but which had been the standard pocket book of fire prevention inspectors since 1914.

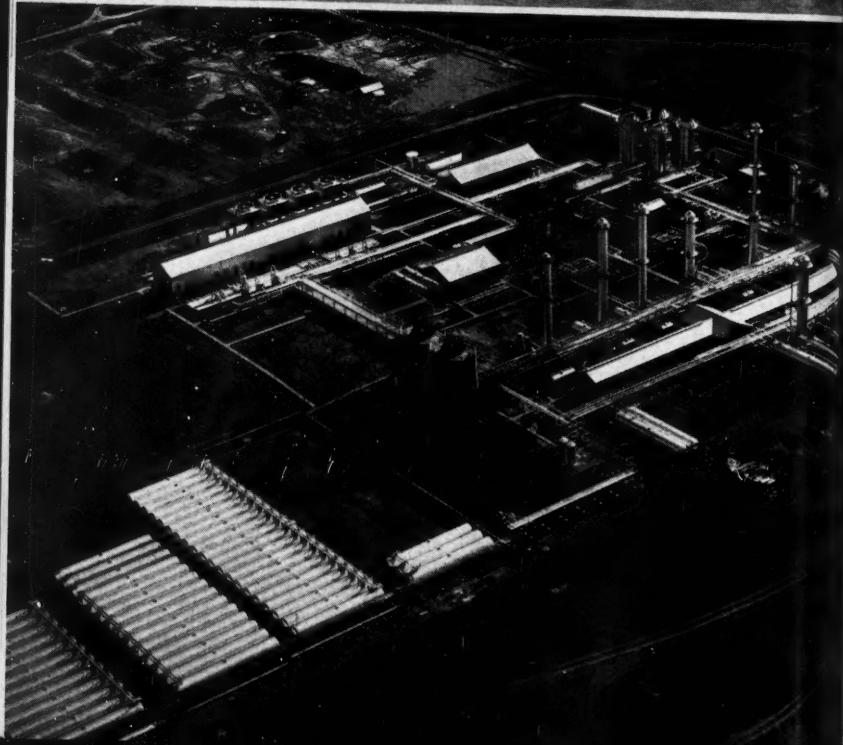
The common hazards of housekeeping and problems of storage are treated at some length. There is a comprehensive treatment of heaters of all kinds, domestic heating equipment being covered in detail. There is full data on clearances required for heaters (including industrial equipment), and chimneys and gas vent pipes are treated in such a way as to help the inspector deal with conventional and unconventional installations. A section on ovens and driers includes much new material. Inspections for LP-Gas systems are covered.

The NFPA Inspection Manual contains 336 pages, 111 illustrations and 66 tables. The price is \$3 per copy and it is published by the National Fire Protection Assn., 60 Battery-march St., Boston, Mass.

Kansas Engine School Had Full Attendance

"A full house" was in attendance at the Kansas State LP-Gas engine fuel service school last month in Manhattan, Kansas, LPGA has reported.

Registration for the school was limited to 200 because of a shortage of hotel accommodations, the association said. Classes were held Jan. 21-23.



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Distributor Group Sees LP-Gas in the Making

By CRAIG ESPY and
CLIFF BRADY

RAPID Thermogas Company of Des Moines, Iowa, which has operated for 20 years and now serves LP-Gas to approximately 150,000 customers in the states of Iowa, Wisconsin and Illinois, is making the old principle, "seeing is believing," pay off in a new and modern way.

Twice a year this company conducts a company-paid trip for key personnel to some plant operated by an important source of equipment and supply. Field trips have been made to Fisher Governor Co., Pressed Steel Tank Co., Hamilton Manufacturing Co., and the Garvin county plants operated by Warren Petroleum Corp., near Maysville, Okla., where LP-Gas is manufactured. This latter trip was completed in December.

The Warren Petroleum Corp. field trip is decidedly the longest the 27 key employes have made. They came in style to Tulsa on Dec. 11, via chartered pullman car—a distance of 1040 miles, round-trip; and then took off in a chartered bus provided by Warren to the Garvin county plants in the Golden Trend area in Oklahoma—another 360 miles, round-trip.

Breakfast was served to the men by Warren on their arrival in Tulsa. This company likewise provided each member of the tour with a fried-chicken box lunch to eat while the bus was en route to its destination. Warren was also host that night after

the field trip at a steak dinner. Cold drinks were dispensed while the bus was en route.

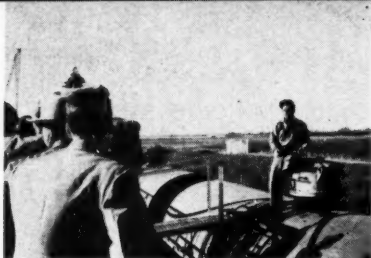
Charlie Russell, president of Rapid Thermogas, says his men get more "talkable" information from a trip of this kind than they could in almost any other way. He also pointed out that such trips are invaluable as a morale builder. Speaking for Warren Petroleum Corp., J. A. LaFortune, executive vice president of the company, said that any man making a "we've-seen-it-done" trip of this kind cannot help but sell LP-Gas products in a more enthusiastic and authoritative manner.

Those making the field trip included the chief executives of Rapid Thermogas, plant operators from 12 plants, field men, service supervisors and assistants and two executives of Wisconsin Bottled Gas Co., of Medford, Wis.

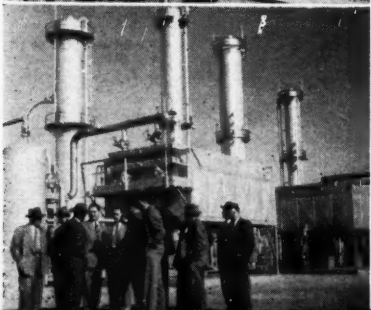
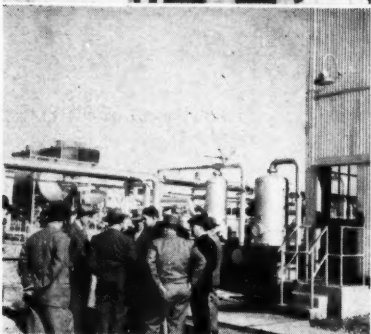
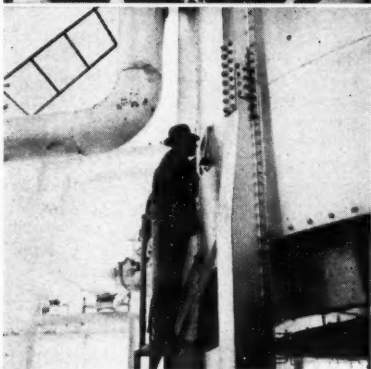
P. J. "Teep" Hoagland had charge of the trip for Warren. Other Warren men making the trip included Fred LaFortune, J. T. Bradley and Jim Kaiser, of the Madison, Wis., office and Cliff Brady. These same men and other representatives of Warren, including J. A. LaFortune, H. W. Harts, vice president of manufacturing, H. E. Felt, vice president, LP-Gas Division, and G. L. Brennan, general manager of the LP-Gas division, attended the banquet held for the guests. These officials of the company, also made short speeches of welcome at the banquet.

The plants visited represent one of

Opposite page (top): The Rapid Thermogas representatives just as they alighted from the train to join the Warren Petroleum Corp. tour. Bottom: Aerial view of the plant storage tanks for natural gasoline and LP-Gas are shown in left foreground. Compressor building in upper left background, distillation and fractionating equipment at upper right.



From top to bottom: Men on top of tank car loading rack. One of visitors looking into peep hole to see fireboxes of furnace for heating oil prior to processing. Two views of groups touring the plant.



the largest and most modern LP-Gas production plants in the world. The plants were constructed as a joint venture and are operated by Oklahoma Natural Gas Co., Cities Service Oil Co., J. E. Crosbie, Inc., Texas Co. and Warren Petroleum Corp., and are operated by the last named company.

Cliff Brady, project engineer for the plants, took charge of the tour after it reached destination. The tour party was divided into three groups led by Guy Barrett, district superintendent; H. J. Bourke, plant superintendent, and Mr. Brady, who as co-author of this article tells in the layman's language what the men saw and experienced on the tour.

An explanatory description of the processes involved in manufacturing LP-Gas will be of value to all dealers in LP-Gas.

LP-Gas is one of the products manufactured by the natural gasoline industry. Methods used to recover these products differ from plant to plant, but the Maysville plant of the Garvin county plants is typical of modern installations designed for the recovery of LP-Gas. Raw product for the manufacture of LP-Gas usually comes from a gas which is produced with crude oil from oil wells. Natural gas contains the products manufactured by the gasoline plants. This gas, commonly called green gas, is separated from the crude oil by an oil and gas separator which is designed to separate the crude oil from the gas so that the crude oil can be delivered to storage tanks on the leases and the gas metered and delivered through a pipe line to the plants.

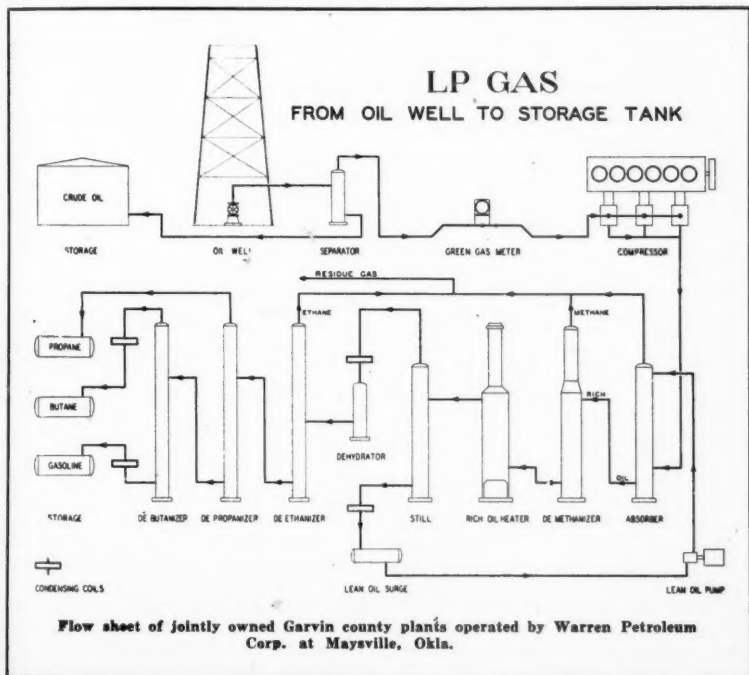
The gas gathering system of a

plant is a system of pipe lines which fan out from the plant to the leases. The green gas, delivered to the plant through the gathering system, is compressed to the desired pressure for processing. The Garvin county plants consist of three, one located at Antioch; one at Lindsay, and one at Maysville, all in Oklahoma. Each of these plants has its own gathering system. The green gas, after being delivered to the plant through the gathering system and compressed, is passed through an absorber where it is stripped of its products.

The absorber is designed to remove the natural gasoline and LP-Gas

from the green gas. In order to remove these products from the green gas, a mineral seal oil is used. Mineral seal oil, as used by the Garvin county plants, is an oil of about 42° API gravity and 180 molecular weight, which is only slightly heavier than kerosene. This mineral seal oil is called lean oil before absorption and rich oil after absorption.

The absorber as shown in the accompanying diagram is a tall tank-like tower which is so designed internally as to give the maximum contact between the green gas entering the bottom of the tower and the lean oil entering the top. Lean oil





Officials of Warren Petroleum Corp. and Rapid Thermogas Co. who attended the banquet: (rear, left to right): W. H. Harts, Charles O. Russell, J. A. LaFortune, H. E. Felt, Harlan Williams, G. L. Brennan. In foreground—Lee Rasmussen (extreme left), G. W. Southworth (with cigarette), and C. L. Crippen (with fork in hand).

flowing downward through the absorber contacts the green gas flowing upward through the tower and removes the natural gasoline and LP-Gas along with traces of methane and ethane gas. Gas, consisting largely of methane and ethane, leaves the top of the absorber as residue gas and is available for fuel or for sale to gas companies. The mineral seal oil as it comes out of the base of the absorber contains natural gasoline and LP-Gas which is later fractionated into products at the plant.

The Lindsay and Antioch stations are known as absorption plants. Feeder lines from the Maysville plant supply lean oil to the Antioch and Lindsay station absorbers and return the rich oil from these stations to Maysville for processing. At Maysville the rich oil streams from all three plants are commingled and passed into a demethanizer. The de-

methanizer's duty is to remove from the rich oil all traces of methane. The demethanized rich oil leaves the bottom of the demethanizer and passes through a rich oil heater on its way to the still.

The heat supplied to the rich oil is sufficient to cause the complete distillation of natural gasoline and LP-Gas from the oil once it enters the still. The products leave the top of the still as vapor, and the oil leaves the bottom of the still as a lean oil which is cooled and delivered to a surge tank.

The lean oil, upon reaching the surge tank, has completed its circuit and is ready to be pumped back to the absorbers for reuse. The vapors coming off the still are cooled and condensed, giving a liquid stock known as the raw make stream. This stream is then pumped through a dehydrator to remove any traces of moisture. After the raw make leaves

the dehydrator, the dew point of the products has been lowered sufficiently to give a dry product. The dried raw make is ready then to be fractionated into finished products. During absorption, some traces of ethane will be picked up and in order to provide a pure propane, this ethane must be removed.

To bring about the removal of the ethane, a deethanizer is provided. The dehydrated raw make is pumped into the deethanizer which removes the ethane at the top as a vapor. This ethane is mixed with the residue stream from the absorber and is used as fuel. The deethanized raw make is then charged into a depropanizer tower. From the depropanizer, propane leaves the top of the tower as a vapor. The propane vapor is condensed by a cooling coil to a liquid propane.

Extracting Butane

From the bottom of the depropanizer, the depropanized liquid is injected into a debutanizer. The debutanizer splits the charge into butanes (isobutane + normal butane) and natural gasoline. Butane vapors leaving the top of the tower are condensed to liquid butanes. Natural gasoline comes from the bottom of the tower, is cooled and stored in storage tanks ready for shipment. LP-Gases, propane and butanes, are treated to remove any trace of harmful sulfur compounds and checked to be sure that the product is non-corrosive. The LP-Gases are then delivered to storage tanks for shipment.

Shipment of LP-Gas from the plant is usually in one of three ways: tank-car, tank-truck or pipe line. The Garvin county plants have facilities to make delivery by any of the three methods given above. A truck loading dock is provided to load four trucks simultaneously with either propane

or butanes. A tank-car loading rack provides for spotting thirty-six (36) tank cars. The piping system at the loading rack is manifolded so that propane and butanes can be loaded simultaneously to different cars.

George Schulte, Jr. Will Help Direct Promotion Program

George J. Schulte, Jr., has been appointed assistant director of the LP-Gas Information Service, Chicago, it is announced by Lee A. Brand, chairman of the National Committee for LP-Gas Promotion. He will assist in the publicity and administrative phase of the national LP-Gas promotional program launched early in 1950 by the liquefied petroleum gas industry.



G. J. SCHULTE, JR.

A journalism graduate of the University of Missouri, Mr. Schulte has been engaged in publicity work for more than 10 years.

Co-sponsored by the Gas Appliance Manufacturers Association, Liquefied Petroleum Gas Association, National Butane-Propane Association and Natural Gasoline Association of America, the LP-Gas promotional program is a three-point venture embracing advertising, publicity and employee training. The LP-Gas Information Service was established recently at 11 S. La Salle St., Chicago, as its central publicity and information outlet.

Information Issued on ASME Tanks and Car Markings

Discussion of approval of ASME tanks built under the 1950 code and ICC amendments to regulations pertaining to marking of tank cars, transports, trucks, portable tanks, etc., were bulletined in December by John Knox Smith, field engineer for the LPGA. These are published below:

1950 ASME Code. Some confusion has arisen concerning the approval of tanks built under the 1950 ASME Code. To reduce this confusion to a minimum, it is suggested that all tank fabricators do not build LP-Gas tanks under the 1950 ASME Code, and distributors and installers do not purchase and install such tanks without checking with local authorities to be sure that such equipment can be installed. The 1950 edition of Pamphlet 58 sets up standards for the use of 1950 ASME Code tanks, but many of the states have not adopted the 1950 edition of Pamphlet 58 as yet.

Many states without LP-Gas regulations, but operating under a boiler or unfired pressure vessel law have also failed to adopt the 1950 ASME Code as yet. Records indicate that the following states have adopted the 1950 ASME Code, either through their unfired pressure vessel law or LP-Gas regulations: Washington, District of Columbia, Utah, Arkansas, California, New Jersey, Oregon, Vermont, Illinois.

Check with your state authorities to be on the safe side.

Interstate Commerce Commission. The ICC has made two amendments in their regulations which pertain to LP-Gas, with the compliance date set at Dec. 31, 1950. These amendments are as follows:

"Section 72.4 note 1 (order March

7, 1949), is amended to read as follows:

"Note 1: Where the word 'IN-FLAMMABLE' is now painted, stencilled, or otherwise permanently marked on tank cars, cargo tank motor vehicles, portable tanks, or other containers, it may be so continued until such tank or other containers are repainted, restencilled, or both, and at such times shall be replaced with the word 'FLAMMABLE' unless otherwise ordered by the Commission.

"Section 77.823 (formerly sec. 823 order Jan. 23, 1950), is amended to read as follows:

"77.823 Marking on motor vehicles and trailers other than tank motor vehicles.

"(a) Every motor vehicle transporting any quantity of explosives, Class A, poison gas, class A, or radioactive material, poison class D requiring red radioactive materials label; and every motor vehicle transporting 2500 pounds gross weight or more of explosives, class B, flammable liquids, flammable solids or oxidizing materials, corrosive liquids, compressed gas, class B poisons, and tear gas, or 5000 pounds gross weight or more of two or more articles of these groups shall be marked or placarded on each side and rear with a placard or lettering in letters not less than 3 inches high on a contrasting background as follows:

- "(1) Explosives, class AEXPLOSIVES
- (2) Explosives, class BDANGEROUS
- (3) Flammable liquidDANGEROUS
- (4) Flammable solidDANGEROUS
- (5) Oxidizing materialDANGEROUS
- (6) Corrosive liquidDANGEROUS
- (7) Compressed gas....COMPRESSED GAS
- (8) Poison gas, class A.....POISON GAS
- (9) Tear gasDANGEROUS
- (10) Poisons, class BDANGEROUS
- (11) Dangerous, class D Poison.....
DANGEROUS-RADIOACTIVE MATERIAL"

A. N. Kerr, Industry Pioneer, Wins New Recognition

APPROPRIATE tribute was paid last month to the real pioneer of the liquefied petroleum gas industry when A. N. Kerr of Los Angeles was presented with a scroll extolling the importance of his contributions to the industry and making him a life member of the Liquefied Petroleum Gas Assn.

Several years ago the LPGA directors arranged for a special recognition award that could be made every year to some outstanding personality for meritorious service. The committee determining such award was composed of past presidents of the association. Mark Anton was the recipient of the first award, it being based largely upon his leadership in forming a national association that later developed into the LPGA.

The award to Mr. Kerr honored him for being the first individual to actually produce what is today known as liquefied petroleum gas, this occurring in 1910 at Sistersville, W. Va., in a plant of the Riverside Oil Co., of which Mr. Kerr was general superintendent. Out of that first, small experiment has grown an industry that in 1950 marketed 3 1/3 billion gallons of practically the same product that Mr. Kerr "discovered" 40 years ago. Associated with him in the early developments were his cousin, C. L. Kerr, and Frank P. Peterson.

Since 1910 Mr. Kerr has been identified with the industry continuously, first in the refining end and later as a distributor. In 1917 the Kerr cousins organized the Rockgas Products Company of Pittsburgh and in 1925 there came into existence the Imperial Gas Company, organized to



A. N. Kerr receiving the "distinguished service life membership" LPGA award from Ty Ransome, former LPGA president.

sell "Rockgas" to farmers in the Imperial valley in California, but shortly thereafter the company was established in Los Angeles where operating headquarters still exist for widespread distribution of fuel, equipment, and appliances in California and Arizona.

Possibly in recent years Mr. Kerr has been most widely known for his efforts to establish safe practices within the LP-Gas industry. He has written and talked upon this subject innumerable times and has had a great deal to do with emphasizing the importance of safety to industry men throughout the country.

The LPGA framed scroll to Mr. Kerr reads:

"In recognition of his outstanding contribution through untiring and selfless service to the growth of the

liquefied petroleum gas industry to its important position in the economy of the United States and the world, the Liquefied Petroleum Gas Association on this 11th day of May, 1950, hereby bestows on A. N. Kerr this distinguished service life membership."

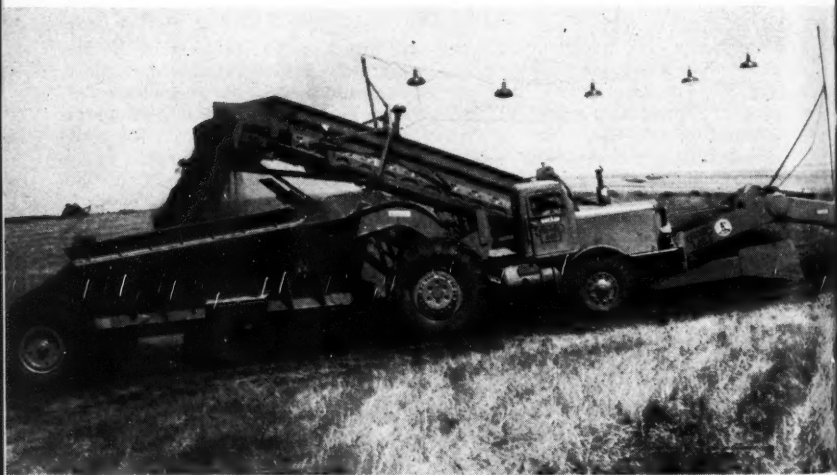
Presentation was made by Tallent Ransome, a recent president of the national Liquefied Petroleum Gas Assn., at the Ambassador hotel, Los Angeles, on Jan. 2 at a luncheon specially arranged for the occasion. Invited guests in addition to Mr. Kerr and Mr. Ransome, were Mr. Kerr's son, Jack, Harry Horn, C. L. Parkhill, J. Warren McMillan, Jr., Dick Dorst, James Barr, Philip Koch, Paul Lady, Joe Fagan, Ed Foote, and Lynn Denny.

H. N. Forman Elected President Of Protane Corp., Erie, Pa.

H. N. Forman has been elected president of The Protane Corp., Erie, Pa., according to a recent announcement by H. K. Strickler, chairman of the board.

Mr. Forman comes to Protane from the B and J Auto Spring Co., Inc., and its associated companies, where he served as president.

The Protane Corp., a pioneer in the LP-Gas industry, was organized in 1923 and according to Mr. Strickler, was the first distributor to develop and install a bulk storage plant and also the first distributor to use railroad tank cars for the transportation of liquefied petroleum gases. Its operation today consists of 28 bulk plants which serve retail customers in 22 states.



A 35-cu. yd. Euclid bottom dump earth hauler fueled by LP-Gas.

Utility Demonstrations Set Pattern For Fighting Propane Fires

By WILLIS E. MULDREW

WHETHER war or peace lies ahead, hundreds of men in Pittsburgh Group gas companies are being trained to fight fire. Six fire-fighting schools have been held in strategic locations throughout the territory of The Manufacturers Light & Heat Co. and its associated companies in the Pittsburgh Group of the Columbia Gas System. The men acquiring firsthand experience in extinguishing propane, natural gas, oil, and gasoline fires are now equipped to pass on their knowledge to others in compressor stations, propane plants, shops, and field crews.

The gas engineering department of Pittsburgh Group companies has been responsible for this training program. Its entrance into this field of activity originated several years ago when propane plants were constructed to aid in meeting peak load requirements.

One of the vital components of each propane plant was, and is, an effective method for extinguishing fire. Although the plants were designed according to the best known practices, no one can dispute the potential fire hazard and the desirability of having proper fire fighting equipment.

Experiments were conducted

with various types of fire fighting equipment. Extinguishers of many makes were used on purposely set and well-controlled fires. This investigation indicated that the dry chemical type extinguisher was superior to others in killing fires originating from either liquid propane or propane vapor.

After this type of extinguisher became standard equipment in our propane plants, various field superintendents and foremen in production-transmission activities asked for this equipment in their shops and stations. It was, therefore, judged wise to make a special effort not only to refresh the memory of many men on good fire fighting practices, but also to give

It should be interesting to LP-Gas dealers to read how a large utility, using propane as standby fuel, has trained its personnel to combat any fires that may occur.

The thoroughness of the training program described and the methods used will suggest to dealers many procedures they can establish to familiarize their crews with sound methods of fighting fires if such occur.

The subject is particularly appropriate when the industry has the emergencies of the defense program so much in mind.

The author, Mr. Muldrew, is the Pittsburgh Group's gas engineer, who supervised the training course.

them a thorough schooling on the uses of dry chemical extinguishers.

Pittsburgh Group fire-fighting schools were held in July, August, and early September at the group's Ellwood City, Dundee, Claysville, Porter's Falls and Rider compressor stations. The scope of training was identical at each location, but two classes were held at Ellwood City for different groups.

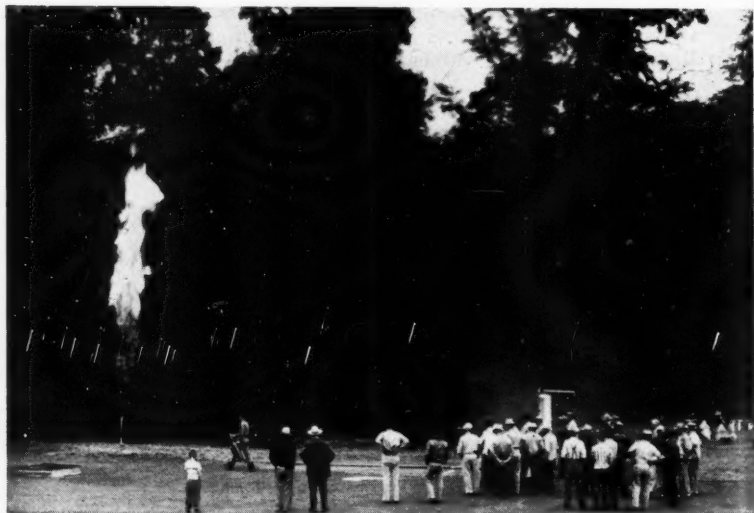
Arrangements were made with superintendents of operating departments to send key personnel to the school nearest normal work location. Students included propane plant operators, compressor station employees, transmission and production divisional superintendents, and foremen, plus gas distribution

department district and local managers. Representatives of fire departments in cities and towns near each school were also invited to attend the one-day session.

Demonstration Plan

A setup was made at each compressor station on the day preceding the school. Arrangements were made to have a tank truck of propane available at those stations where the group companies did not have propane storage tanks. Pits and ditches were dug on a far corner of a compressor station lawn, and natural gas piping laid above ground to the demonstration area.

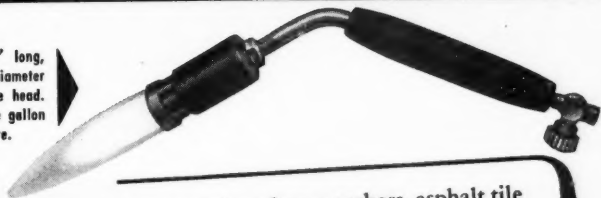
As each group of about 25 men



Towering fire at left was made with liquid propane at high pressure. Note gasman approaching it with dry chemical extinguisher. Extinguishing time: a few seconds.

You Have Plenty of Nearby Prospects for RANSOME 71 TORCHES

71 Hand Torch—14½" long,
weighs 1¾ lbs., head diameter
1½", 45° angle bronze head.
Operates 6 hours on one gallon
LP-Gas at 10 lbs. pressure.



Plumbers, pipefitters, sheet metal workers, ranchers, asphalt tile workers, garages and foundries find the RANSOME 71 torch a real time-saver. They use it for sweating large streamline fittings, lead wiping, melting lead joints, core drying, light preheating, melting babbitt for bearing repairs, laying and shaping asphalt tile.

MANY SELLING POINTS—The RANSOME 71 torch is light and well-balanced; plastic handle fits the hand. Flame is extremely stable—will not blow out even in high wind. This torch can be used in any position—no danger of fuel spilling when used upside down. It is precision made, hand polished, and individually tested . . . an easy-to-sell package.

BRINGS YOU EXTRA BUSINESS—Remember, RANSOME torch users buy LP-Gas the *year-round*, usually in small containers that gross you ⅓ to ½ more than bulk prices. Users soon see the safety and other advantages of LP-Gas, and become first-class prospects for home and additional industrial uses.

SELL THE FULL LINE—The 71 torch is just one of RANSOME's several volume-building torches and furnaces. Stock the line NOW. Write TODAY for price list, dealer discounts, and big, 20-page catalog.

RANSOME COMPANY

Designing & Constructing Engineers

ROOM 102, 4030 HOLLIS ST.

EMERYVILLE, CALIFORNIA

Ransome

met on the morning of the designated day, they were told that the fires to be set were created to simulate as closely as possible the hazard of a broken pipe, loose flange, spilled liquid, and the like.

Variety of Fires Extinguished

Each man present at the school was to extinguish each type of fire.

The first blaze came from the open end of a 2-in. natural gas line. Gas was coming through the line at about 150-lb. pressure.

To simulate the condition of an underground broken pipe, about 10 ft. of 2-in. line was laid in a ditch. One-half-inch holes were drilled every 18 in. along this pipe, which was covered with 15 in. of rock and earth. Gas was turned on and ignited by a torch. One by one the gas men approached the fire which repeatedly rose 10 or more feet from the ground. Again and again in a matter of seconds, the blaze was extinguished.

A liquid propane fire was demonstrated by having a $\frac{1}{4}$ -in. hole drilled into the cap on a 2-in. line that extended up about 4 ft. from ground level. Despite 115 lb. of pressure behind this propane blaze, it too was successfully extinguished by each man.

What might happen when the packing blows out of a valve was next demonstrated. A cap having four $\frac{1}{4}$ -in. holes was placed on the pipeline. The blaze, resulting from liquid propane squirting out of these holes, towered over the tops of nearby trees.

Another demonstration of a propane fire utilized a bolted flange on



Demonstrating the correct way to smother a blaze. The dry chemical stream forms a protective, heat-shielding screen but firefighter still feels intense heat of the blaze.

the pipeline with a 1-in. section of the gasket removed. This represented the potential situation when a gasket becomes defective.

Liquid Propane

One of the largest fires at each school was created when liquid propane was introduced at 115-lb. pressure into the pipe which had a $\frac{1}{2}$ -in. hole in the cap. This blaze usually attracted the unexpected audience of freight train engineers, passing motorists and farmers from neighboring hillsides. But it, too, was promptly smothered over and over again as each student took his turn.

The pan-type fire was demonstrated by pouring 10 gal. of oil and 5 gal. of gasoline into a 25-sq. ft. pan which contained about 5 in. of water. As the long-handled torch set this mixture ablaze, a roaring

fire and thick black smoke was instantly created. Approaching the blaze, "with the wind," the production, transmission and distribution men swept the extinguisher nozzle back and forth across the blazing tank to quickly stop the fire.

Smothering Chemical

The extinguisher used by the Pittsburgh Group men was a unit which contained 30 lb. of a dry chemical that has a sodium bicarbonate base, treated to make it water-repellent. The powder is pulverized to the extent that 80% of it can pass through a 325-mesh screen. The propellant is 8½ oz. of carbon dioxide in a cartridge. Expelled with great force from the nozzle of the extinguisher, the sodium bicarbonate in striking the flame increases its volume more than 1000 times, and is transformed into carbon dioxide and water vapor. A smothering action takes place.

In addition to training Manufacturers Light & Heat men, and men of the associated companies, the gas engineering department also has accepted invitations to assist outside agencies. Within the last year, demonstrations in fighting propane, natural gas, and gasoline fires with a dry chemical were given in Wheeling, W. Va., and Martins Ferry, Ohio. This specific part of three-day schooling in all aspects of fire-fighting was conducted by gas company personnel at the request of the Wheeling fire department and the Industrial Fire bureau of the Ohio valley.

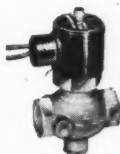
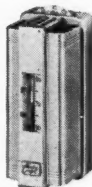
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Write us now for these FACTS YOU NEED—FREE!

Just check space opposite equipment you're interested in, fill in your name and address and mail this column to us. We'll get your facts to you promptly.

Dollar for dollar, the Honeywell TM81A Acratherm does the best temperature control job of *any* thermostat in the gas field. It's extremely simple to calibrate, set and adjust. The TM81A Acratherm controls both the On and Off cycles of the burner—a feature exclusive with Honeywell. Check here if you would like additional information. ☐



Rugged, dependable and low in cost, the Honeywell V835A Solenoid Gas Valve is the most popular control in its field. The metal disk on the valve seat practically wears forever. A hammer action type plunger and a sturdy centering disk assure operation under the stickiest of gas conditions.

Specify if for L. P. Gas. Check here for further information. ☐

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"Better Living"—Appealing Story to LP-Gas Prospects

A highly attractive and informative booklet on the applications of liquefied petroleum gas is being distributed by the Liquefied Petroleum Gas Assn.

Its complete title is "How to Enjoy Better Living Right Now—wherever you are—With LP-Gas," but popularly referred to as "Better Living."

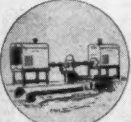
All the principal uses of the fuel are covered in excellent illustrations and limited but pertinent text. The arguments for LP-Gas are convincing. The booklet should create much

favorable attention and aid dealers substantially in promoting sales to prospects and acquainting the uninitiated with the versatility of butane and propane.


Denver Service School Feb. 19

University of Denver (Colorado) will be the location of the annual Rocky Mountain Empire LP-Gas service school, Feb. 19-21. Registration, to be made through the university's adult education department, is now under way.


The school is one of several sponsored annually by the LPGA.




A dependable fuel for stationary engines—abundant power for pumping water, grinding corn, for light plants and scores of other valuable jobs.




Steady warmth in incubators and poultry brooders means fewer mortality, greater pig yield with controlled heat brooders.




For faster curing of hay and for better and drier curing of fruits and vegetables.




A modern, efficient tractor and truck fuel.




Flows of boiling water for scalding and washing of poultry.



Boiler sterilizing in the milk house.



Flame cutting, paint burning and other maintenance work.



For warming feed water in the barn or in the field.

LP-GAS offers better farming

...in dozens of ways!

More and more farmers are making extra profit by putting LP-GAS to work for them. You, too, will find LP-GAS an easy-to-use, dependable source of heat and power, no matter where you live.

Talk it over with your LP-GAS dealer today. He can tell you what other farmers in your area are doing with this modern economy fuel. He'll be glad to explain what LP-GAS will do to lighten work and cut costs.

Other important agricultural uses of LP-GAS include milk cooling, orchard heating, fruit ripening, broiler and grower brooding, poultry disinfecting and singeing.

A reproduction of two pages of the "Better Living" booklet showing a few of the applications on the farm.



Hard-to-hold

LPG

is an easy assignment
for this revolutionary
non-lubricated valve

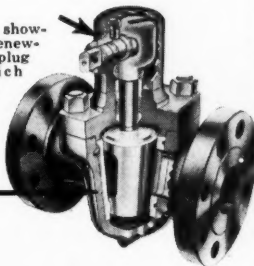
Liquefied Petroleum Gases, such as butane and propane, are rough on ordinary valves . . . particularly those valves which depend on a lubricant for a tight seal. These light hydrocarbons have an affinity

for valve lubricants, and once the lubricant is dissolved by the butane or propane the line product is not only contaminated but the valve no longer effects a shut-off.

LPG is one of a number of the difficult industrial services where Cameron NON-LUBRICATED Lift-Plug Valves have turned in an outstanding performance. This valve is unique in that its seat is separate from the valve body. Line pressures tend to improve rather than destroy the geometry of the fit between the seat and plug. Obviously, the separate seat feature permits any desired trim. And, the valve may be completely overhauled without removing it from the line.

Send today for literature on this truly remarkable valve. It may be the answer to your valve problem, too!

Cutaway view, showing separate renewable seat and plug actuator which lifts, turns and seats plug in $\frac{3}{4}$ turn of the operating lever.



Cameron

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Associations

Kentucky

"Kentucky LP-Gas News," official publication of the Kentucky LP-Gas Assn. has changed its format. In 1951, the News will be letterpress-printed—instead of multigraphed, as it was heretofore.

The newly adopted publication method will allow a cleaner, more readable product, and greater flexibility in the revising of advertisements and editorial material, the editors said.

Indiana

There will be a big birthday party in Indianapolis this month—the Indiana LP-Gas Assn. is just one-year old. By way of celebration, members are holding the group's first annual convention and trade show at the Hotel Antlers, Feb. 7-8.

A full agenda of business and social

activity has been scheduled for the occasion. Annual business meeting is slated for the Boulevard room of the Antlers, on the morning of Feb. 8. Scheduled speakers include Henry F. Schricker, governor of Indiana, Kenneth W. Rugh, Philgas division manager, Phillips Petroleum Co.; Floyd F. Campbell, management consultant; and M. A. Ennis, Cribben & Sexton Company.

On the social side, Indiana LPGA committeemen have included square dances, an "Indiana Homecoming luncheon," a banquet, a fashion show, a floor show, and the customary "friendship hour."

One of the important proposals to be presented at the business meeting, according to Indiana LPGA president Ted Feely, will be a plan for holding district meetings of the association member-dealers throughout 1951. Tentative plans call for these meetings to take the form of open discussions on major topics of interest—legislation, technical problems, operation, distribution, etc.

Mountain States

June 10, 11, and 12 have been announced as the dates for the first annual convention and trade show of the Mountain District, LPGA, J. C. Crawford, district secretary, said last month.

Site of the affair has been announced as Troutdale-In-The-Pines,



FLOYD CAMPBELL



K. W. RUGH

Evergreen, Colorado, Mr. Crawford said.

The Mountain District is composed of New Mexico, Colorado, Utah, Wyoming and Montana.

New Jersey

The annual dinner and election of officers for 1951 will be held Feb. 20 by the New Jersey LP-Gas Assn., it has been announced by Edward A. Keible, chairman of the affair.

Jersey LP-Gas men will gather for the occasion at the Berkeley-Carteret hotel in Asbury Park, scene of the entire program.

Four subjects of interest to LP-Gas men will be discussed by a panel of eight experts. The topics include propane as a motor fuel, natural gas in New Jersey and how it will affect the LP-Gas industry, propane shortages at this time and why, and the new LP-Gas code in the state and how it



MANNY GALE



MURRAY GLASS

will affect the individual operator.

Outgoing officers of the association are Manny Gale, president, Murray Glass, vice president, and Guy Richdale Jr., secretary-treasurer.

Oklahoma

By O. D. HALL

Immediate plans for a series of district service schools in Oklahoma during the last week in January and



LP-Gas-powered plane, flown from Oklahoma City to Sarasota, Fla., for Green's Fuel distributor meeting. Green's Fuel company officials at right (left to right): Taylor Green, president; W. J. Burkett, chief engineer; L. L. Hughes, (Hughes Carburetor Co.); Sarah A. Jackman, secretary-treasurer; K. H. Koach, vice president and general manager; and Franklin Bennett, purchasing agent.

the first week in February were laid at a meeting of the board of directors of the Oklahoma LP-Gas Assn. held at the Skirvin hotel, Oklahoma City, Jan. 5.

Dates and places for the Oklahoma meetings were to be announced by Robert C. Tanner, Wichita, Kans., secretary, Central States District, as soon as he could confer with Ben Gault, Robertshaw-Fulton Controls Co., who handles demonstrations of assembling and servicing automatic controls used in connection with LP-Gas service.

Will Hold Joint Convention

The board decided to hold a joint meeting with the Kansas LP-Gas Assn. board of directors at Wichita, at which plans will be discussed for the next joint state convention of the two associations to be held probably in Oklahoma in April.

Each member of the Oklahoma board who was present was furnished with a copy of a bulletin issued by Liquefied Petroleum Gas Assn., Central District, which he was asked to present to his local defense organization, or to mayors and city managers in his territory. This expressed the earnest desire of the liquefied petroleum gas industry to cooperate with such authorities "in every possible manner and to encourage active cooperation at all levels in all cases of emergency," and

"1. In providing certain necessities of life for the homeless, wounded or needy civilians.

"2. Preventing the spread of fires by prompt removal of LP-Gas installations from danger areas."

A plan for increasing the membership in Oklahoma was discussed and blanks were distributed to each member of the board who pledged to interview non-members in an effort to bring them into the organization.

Attending the meeting of the Oklahoma board, in addition to Secretary Tanner, were: W. J. Alexander, Nelson Keller, Earl V. Parker, R. M. Lillard, H. Emmett Wilkins, Jim Grigsby, Jr., Lewis Mitchell, Jewel Callahan, and Glenn H. Moore.

South Dakota

Members of the South Dakota LP-Gas Assn. will gather in Huron's Marvin Hughitt hotel March 22-23 for their annual convention and trade show, it has been announced by George S. Batchelder, Jr., executive secretary of the state association.

March 21 has been scheduled for the setting up of booth exhibits and other displays. A full program of business meetings and addresses by industry authorities has been planned, Mr. Batchelder said.

Texas

Early indications of a sell-out of exhibition space have made executives of the Texas Butane Dealers Assn. confident that their first annual Southwestern Butane Exposition next June in Dallas will break all records for regional LP-Gas trade shows, according to Claude D. Ribble, association president.

To be held in the Crystal ballroom and the Bluebonnet court of the Hotel Texas on June 13, 14, and 15, the exposition will for the first time present manufacturers' exhibits to dealers from five states:



CLAUDE D. RIBBLE

Texas, New Mexico, Colorado, Oklahoma, and Louisiana. Concurrent with the exposition, the Texas association will hold its annual meeting for members.

Illustrative folders explaining details of the exposition and advertising its advantages were sent to potential exhibitors late last year. First booth space reserved was taken by exhibitors in the 1950 Texas exposition—they were given a two-weeks' courtesy in choosing select booth locations. Floor plans of remaining space are now available.

Wisconsin

At the winter meeting of the Wisconsin LP-Gas Assn., held Dec. 18 in Madison, Harris J. Helmer, Badger Gas Products, Platteville, was re-elected president of the group. Secretary-treasurer is Tom Quail of the Bottled Gas Corp. of Wisconsin, Milwaukee, and Ruddy Macon, Blue Star Gas & Appliance, Eau Claire, is the new vice president.

In addition to electing officers, association members met at the Edgewater hotel to hear addresses by Brig. Gen. R. J. Olson, director of civilian defense for the state, and Jack Bradley, Warren Petroleum Corp., whose subject was entitled "Propane — Where From — How Come." Other speakers included Swede Swenson of the A. O. Smith Corp.; Howard White, LPGA; I. F. Statz, Wisconsin industrial commis-

sion; and Ted Frazer and Ernie Mulen, Chambers Corp.

Association business covered insurance, civil defense, LP-Gas promotion at the state fair, and LP-Gas representation at the restaurant show.

South Eastern District

Committeemen of the South Eastern LPGA district are hard at work on plans for the group's convention and trade show which will be held March 19-21 in the Biltmore hotel, Atlanta, Ga.

Increased attendance at the meeting is expected to result from the concurrent meeting of the LPGA board of directors at the Biltmore, March 19-20 in the same city.

American Standards Assn.

Earl H. Eacker, president of Boston (Mass.) Consolidated Gas Co., has been reelected to the board of directors of the American Standards Assn. for a 3-year term beginning Jan. 1, 1951. He was first elected to the board in 1948.

The American Standard Assn. is the over-all clearinghouse for voluntary engineering, industrial, safety and consumer standards on the national and international level. It is made up of more than 100 technical societies and trade associations and 1800 individual company members.

Calif. Retail Hardware Assn.

Members of the California Retail Hardware Assn.—many of them LPGAsmen and LPGA members, also—will gather in San Francisco's Fairmont hotel for their annual convention Feb. 19-22, it has been announced by K. B. Jacobsen, former West



H. J. HELMER

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**RegO's Complete Line Enables You to Select the
Exact Type and Size for Every Container Application**

RegO gauging devices are the choice of experienced LP-Gas producers; distributors and dealers the country over. They know that RegO gauges provide accurate fuel readings . . . safe operation . . . and long-life dependability.

RegO gauges on LP-Gas systems provide an important safety factor in helping to avoid hazards due to overfilling, and, in addition, afford an accurate means for computing fuel inventories and determining rate of use.

RegO Liquid Level Gauges are available to meet your requirements for any type, size or shape of container. Complete information on any or all of the RegO gauges shown will be sent upon request.



**No. 2572
ROTOGAGE**



RegO Rotogages provide quick and accurate liquid level readings. They are designed for:

- Aboveground systems
- Spherical or Cylindrical containers
- End or side mounting

Available in two sizes:

No. 2572 Rotogage—stationary containers up to 60" in diameter—mobile containers up to 24" in diameter.

No. 2582 Rotogage—stationary containers over 60" in diameter—mobile containers over 24" in diameter.



No. 2148R



No. 2148RP

REGO SLIP TUBE GAUGES



RegO Slip Tube Gauges are simple in design, rugged in construction and positive in operation. They are designed for

- Aboveground or underground systems
- Cylindrical or spherical containers
- Top mounting

Available in three types:

No. 2148R Slip Tube Gauge—for accurate gauging of actual liquid fuel content.

No. 2148RP Slip Tube and Fixed Tube Gauge—provides in a single assembly a means of determining the actual liquid level or the maximum permitted filling level.

Duo-Gauge[†] Slip Tube Installations—designed for use on large bulk containers where a single, long slip tube would be awkward and hazardous to handle. A Duo-Gage installation consists of two gauges—one gauge measures the liquid level in the lower half of the container, the second gauge measures the liquid level in the upper half of the container.

[†] Trade Mark



No. 3137

REGO GAUGE GLASS ASSEMBLY



No.
3163

RegO Fixed Tube Gauges provide a simple and accurate means for determining when a container has been filled to the maximum permitted level.

Available in two types—for top, side or end mounting:

- **No. 3162**—designed for stationary containers not subjected to vibration.
- **No. 3163**—designed for containers mounted on trucks, tractors and similar applications where vibration is encountered.

REGO FIXED TUBE GAUGES



The **RegO No. 3137 Gauge Glass Assembly** is designed for installation on storage containers at bulk filling plants where the fuel is withdrawn in the liquid state. Multiple installations are recommended on exceptionally large diameter containers. These gauges are usually end mounted.



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MANUFACTURE OF PRECISION EQUIPMENT
FOR USING AND CONTROLLING LP-GASES**



Coast secretary of LPGA and present secretary-manager of the Retail Hardware Assn.

The four-day Golden Anniversary event will be highlighted by more than 50 exhibits of hardware items, a series of business meetings and a factory trip, addresses by national industrial leaders, and a program of social events.

Information about the event can be secured from Mr. Jacobsen, Suite 262, Western Merchandise Mart, San Francisco.

Piping and Appliance Rules Published by LPGA

More than two years of study and research are represented by the recently released LPGA publication "Recommended Good Practice Rules for Liquefied Petroleum Gas Piping and Installations in Buildings," Arthur C. Kreutzer, association vice president and counsel, said last month.

The publication, long awaited by LP-Gasmen throughout the U. S., has been approved by LPGA's Technical and Standards committee and board of directors. It is subject to modification, however, since it has been published prior to its approval by the National Fire Protection Assn., which group has it under consideration at present. It is expected that the LPGA good practice rules will eventually be published as a part of NBFU, NFPA's Pamphlet No. 58 or a separate NFPA booklet.

Copies of the LPGA booklet are available now, at prices ranging from 20 cents for an individual copy to 15 cents for orders of 100 or more. Inquiries should be addressed to the Liquefied Petroleum Gas Assn., 11 S. LaSalle St., Chicago.

CALENDAR

1951

- Feb. 7-8—Indiana Liquefied Petroleum Gas Assn. 1st Annual Convention and Trade Exhibit. Aptlers Hotel. Indianapolis.
- Feb. 15—LPGA Eastern Canadian meeting. Mount Royal Hotel. Montreal, Quebec, Canada.
- Feb. 19-21—Third Annual Rocky Mountain Service School. University of Denver. Denver, Colo.
- Feb. 20—New Jersey LP-Gas Assn. Annual Meeting. Berkeley-Carteret Hotel. Asbury Park.
- Feb. 23—NGAA Regional Meeting. Settles Hotel. Big Springs, Texas.
- March 19-20—LPGA Board of Directors. Atlanta Biltmore Hotel. Atlanta, Ga.
- March 19-21—LPGA South Eastern District Convention Atlanta Biltmore Hotel, Atlanta, Ga.
- March 22-23—South Dakota LP-Gas Assn. Marvin Hughitt Hotel. Huron.
- Mar. 26-28—LP-Gas Service School. University of Minnesota. Farm School. St. Paul.
- Mar. 29-30—New England LP-Gas Assn. Annual Meeting. Hotel Statler, Boston.
- April 4-6—Missouri LP-Gas Assn. Annual Convention & Trade Show. Hotel de Soto, St. Louis.
- April 16-18—Gas Appliance Manufacturers Assn. Annual Meeting. Drake Hotel. Chicago.
- April 19-21—Florida-Georgia Gas Assn. and Florida LP-Gas Assn. joint meeting. Hollywood Beach Hotel, Hollywood, Fla.
- April 25-27—NGAA. Mayo Hotel. Tulsa, Okla.
- May 7-10—LPGA Annual Convention & Trade Show. Stevens Hotel. Chicago.
- May 11—Liquid Gas Dealers Assn. of California. Annual Meeting. San Francisco.
- June 10-12 — Arkansas Butane Dealers Assn. Annual Convention and Trade Show. Little Rock.
- June 10-12 — Mountain States District (LPGA) Convention and Trade Show. Evergreen, Colo.
- June 13-15—Texas Butane Dealers Assn. Annual Convention & Trade Show. Hotel Texas, Fort Worth.
- Sept. 4-6—Pacific Coast Gas Assn. Fairmont Hotel. San Francisco.
- Sept. 10-12—Eastern LP-Gas Service School. University of Bridgeport. Bridgeport, Conn.
- Oct. 8-12—National Safety Congress. Chicago.

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**Rheem Reliable Dealer
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The best way to step up your income these days is to increase your unit profit.

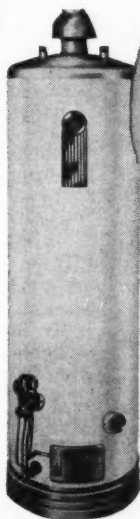
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Rheem makes the most complete line of automatic water heaters in America. All sizes for all fuels—with planned quality and price levels for easy selling up.

All of Rheem's advertising, promotion and point-of-sale aids are designed to help you sell the bigger and better model ... the model that carries more margin for you!



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World-famous for
Automatic Water Heaters,
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Legal-Like Forms Aid Collections

By GENE CREIGHTON

ONE of the most important steps the present-day LP-Gas dealer must take to protect himself in these days of rising costs and stationary incomes, is an efficient, unpaid account collection system, according to Carl Fleming, head of KeyStone-Fleming Inc., LP-Gas dealer of Lubbock, Texas.

"Whereas, collections a year or two years ago were almost 100%, we are encountering a lot of delinquencies toward the latter half of 1950," Mr. Fleming said, "much of which is based on the fact that incomes have not increased, while living costs continue to soar."

With 1800 route customers on its books, KeyStone-Fleming, Inc., has placed its trust in a series of four collection letters developed by a co-operative credit concern of Texas, of which it is a member.

The delinquent-bill collection system functions almost automatically, inasmuch as the same four form letters are used on every count. The system revolves around five sheets, four of which are letters to be sent to the customer at 30-day intervals, and the fifth, a "collection record," on which Mr. Fleming enters the debtor's name, address, amount past due, with five columns listing the mailing dates of forms, and the last column the "date paid." This collection record is posted in blow-up size on the wall of the sales office, where it is a constant reminder to "do something about accounts outstanding." By merely making entries on the form from day to day, we have found that we keep after such accounts, rather than dodging the collection as an unpleasant duty," Mr. Fleming smiled.

The first letter defines the customer's credit record as "a sacred trust"

and states that the company is pledged to report all past-due accounts to the credit service. But the letter further states that this report has been held up.

The second letter declares that the company cannot postpone indefinitely the report of the customer's past-due account and requests cooperation. This letter is 60% effective, according to Mr. Fleming.

The third letter is the "clincher." It contains a deadline for remittance and a legal form called a "disclaimer of liability." This states that if the payment date is not met the account will be reported to the credit service and disclaims all liability for "loss of position, injury to prestige, credit standing, reputation or influence."

"The ominous sound of the 'disclaimer' paragraph invariably 'rocks the delinquent customer back on his heels,'" Mr. Fleming said. "We have found that whenever a disclaimer notice of this type is incorporated in the letter, with heavy, legalistic overtones, customers who would pay no attention to a standard type of invoice, hasten to pay up. While actually, the disclaimer notice only infers that we have transferred the bill from an account to a law suit, it is usually sufficient to get immediate results."

The last letter gives "Final notice preparatory to an impending action for debt." It is a standard legal form.

"Fortunately, we have not had to make much use of this final notice," Mr. Fleming said, "but it has been highly effective in obtaining an immediate settlement of even the most die-hard claims."

"The chief value of the series lies in its legalistic overtones. The method has enabled us to collect 95% of our outstanding accounts, without difficulty, and usually, without losing the customer goodwill," Mr. Fleming said.

Essential Elements of Gas Pressure Regulators

By ROBERT C. LISK

Fisher Governor Co., Marshalltown, Iowa

TO THE gas man a regulator is something as fundamental and familiar as the back of his own hand. All too frequently, however, the gas regulator is a thing taken for granted as long as the inlet and outlet connections are conveniently sized. The outer casing is known to hide certain moving parts but the tendency is to forget their existence.

This constitutes a fine tribute to the modern gas regulator but it doesn't help when the time comes to select a new unit or service an old one. Let's go back to the basic components which enter into the combination we use to control pressure. Let's take a peek inside the casing and review the "Essential Elements of Gas Pressure Regulators."

Suppose you were faced with the problem of building a pressure regulator from scratch. The first thing you need to know is—what does a regulator have to do? Ignoring such natural variations as back pressure valves, differential controllers, etc., the most obvious job a regulator has to do is reduce pressure.

That sounds simple; any restriction in a gas line will reduce an upstream high pressure to some lower downstream pressure. But wait a minute—you find that the up-

stream or inlet pressure never stays the same. So you make a note to provide for changing inlet pressure.

Next you find that the flow through the regulator may be changing all the time. So you make a note to provide for changing flow conditions. You will find that cook-stove and refrigerator burners are pretty choosy about the downstream or outlet pressure. Make a note to keep the outlet pressure as constant as possible.

The regulator must be gentle enough to pamper the pilot on Mrs. Jones' stove. Or it must be brute enough to shake hands with the tremendous energy in a 24-inch 1000 pound pipeline. More notes to make.

Then there is the irritating fact that the regulator may have to flow the most gas when the inlet pressure is the lowest. It may be practically idle when inlet pressure is up and everything is set to do a bangup job. This goes on until the scope of the problem is well in hand.

The next question is, "What do you have to work with?" What can you use to build the regulator? What ingredients are available to

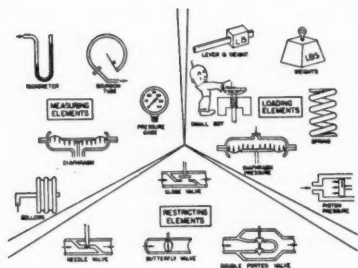


Figure 1—Essential Elements of a Regulator

you in cooking up this device? What are the essential elements?

You find that the essential elements fall into three distinct groups according to their jobs.

First, there is the "measuring element." This particular element measures the outlet pressure and may also enter actively into the working of the regulator. A glance at Figure 1 entitled "Essential Elements of a Regulator" will indicate that this measuring component may be a diaphragm, a bourdon tube, or similar device. A pressure gauge is merely one of these supplied with a case and dial. All of them respond to a change in pressure to give an indication of some kind.

There is second, the "restricting element" shown in Figure 1 which can be opened or closed as necessary to increase or decrease flow. Finally, there is the third or "loading element." This component is supposed to react to a message from the measuring element and force the restricting element to open or close to keep the outlet pressure within bounds.

There is, as shown, in Figure 1, a variety of loading elements including weights, springs, pressure and even a small boy. Thus, out of these three elements, "measuring," "restricting" and "loading," you must build your regulator.

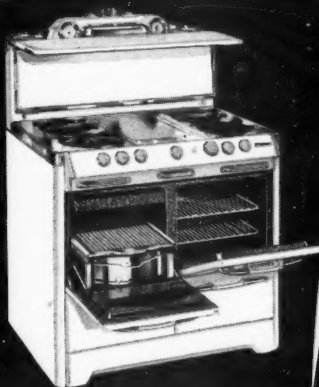
Can you use, in any one regulator, more than one of each element? A little thought reveals that you will want only one measuring element since too many cooks would spoil the broth. For the same reason, you want only one valve or restricting element. When you come to the loading element you find that there is work to be done. Sometimes two hands are better than one. So you decide to use as many loading elements as you want.

Your regulator will, therefore, consist of one measuring, one restricting and any number of loading elements. As a matter of fact, any gas regulator can be broken down into these three elements.

Just to get the hang of it, you build a real simple regulator. A pressure gauge looks like a simple enough way to tell when the pressure changes. So you select the pressure gauge as the "measuring" element. A globe valve is not too complicated, so you select that as the "restricting" element. Even a small boy can read a pressure gauge to detect pressure change, so you select him as the "loading" element. You put them together and you wind up with the simple regulator shown in Figure 2(A). You put this regulator to work in a gas distribution system.

You tell the small boy what the

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Sell **O'KEEFE & MERRITT** Gas Ranges!

In anticipating your gas range sales volume this year—it's to your profit to consider this proven fact! You'll sell more—and make more—with O'Keefe & Merritt Gas Ranges! This famous name, a symbol of carefree cooking, is one that your customers *know* and

prefer. Therefore, your selling job will be easier. You'll find that O'Keefe & Merritt's widely advertised "extras"—the Grillelevator Broiler, stepsaving Vanishing Shelf-Cover and Kool-Kontrol Panel—have "sold" your customers long before you make the sale!

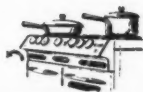
Here's Your "Built-In" Sales Talk!



VANISHING SHELF-COVER
Handy, stepsaving, with new "full-vision" light. Folds down to cover the entire range top when cooking is done.



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pressure gauge is supposed to read and you tell him to screw down on the valve if the pressure gets too high. You tell him to open up the valve if the pressure gets too low. Then you go and play all sorts of tricks on him without his knowing it. You raise the upstream pressure, then increase the gas load downstream, then lower the upstream pressure, sometimes slowly, sometimes rapidly.

The small boy is either so busy he can't keep up with the rapid changes or he is so bored by the slow changes in pressures and flows that he fails to notice that the pressure gauge reading has gradually changed.

Only so long as pressures and flows change in small definite steps, your simple regulator works pretty good. But they don't and it doesn't. This regulator is manually operated and has a lot of built-in error. What you want is an automatic regulator. So you decide to use something else as a loading element.

This time for the measuring element you select the diaphragm;

for the restricting element, the globe valve; and for the loading element, a dead weight. These three elements put together make the regulator shown in Figure 2(B). If it works, you have an automatic regulator. And it works.

Before you turn the upstream pressure on, the diaphragm measuring element doesn't feel any downstream pressure and, therefore, "tells" the weight loading element to push the restricting valve wide open, which it does. Then when the upstream pressure is turned on, gas flows through the valve and pressure begins to build up downstream. The diaphragm measures this downstream pressure as it builds up, but tells the weight to sit still until finally the downstream pressure is high enough. Then, when it is high enough, the diaphragm and weight go up and the restricting valve goes up with them, cutting off the flow of gas.

With no inflow of gas through the regulator, the downstream pressure falls and the measuring diaphragm tells the weight to push the valve open again and let some gas through. Great! You get a regulated downstream pressure and the small boy can go fishing. You have an automatic regulator.

Since it is an automatic regulator, no further attention is required and you can go fishing too. It was a beautiful thought, but it ends right there. The downstream pressure suddenly begins to go up and down, up and down. You look at the regulator. Sure enough, the weight and diaphragm are going

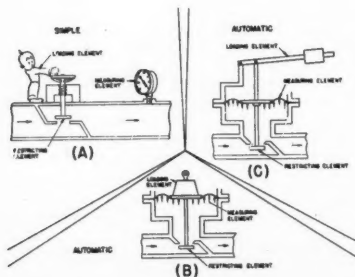


Figure 2—Building a Regulator

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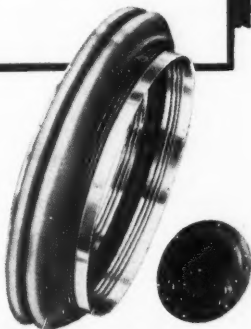
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up and down too. It looks as if the regulator were hunting for the proper downstream pressure and couldn't ever quite decide where it was.

The idea is still good though and you decide to run in a different loading element that might not be so undecided as to where the restricting element should be stopped for a given rate of flow.

The Spring Loading Element

You take off the weight loading element and put on a spring loading element instead. The regulator you have then is shown in Figure 3. Say, this one is real steady now. It gets a good test. It has the characteristic that every time you increase the flow, the downstream pressure, though steady, is somewhat lower. Then when the flow decreases, the downstream goes back up again correspondingly. The restricting element appears to have a certain position for every rate of flow and downstream pressure.

As you ask it to do a better and better job, however, and to handle a wider range of conditions, you find that it has definite limitations. Not the same limitations the small boy regulator had and not the same limitations the weight loaded regulator had, but still it won't do every job. As a matter of fact, it won't do some of the things the small boy regulator would do.

For example, as you apply more and more spring force to achieve a higher and higher downstream pressure, you are suddenly surprised to find that the diaphragm

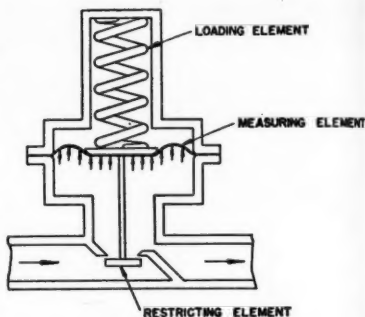


Figure 3—Spring Loaded Regulator

has ruptured and gas is blowing out like mad. You find that a high enough upstream pressure will hold the restricting element closed regardless of what the diaphragm tells the spring, indicating that the pressure difference across the valve is tending to close it. These things didn't bother the small boy regulator.

You think perhaps you can select your three elements so that you get the advantages of all three of the previous regulators. So you select as a measuring element, the bellows; as a restricting element, the globe valve; and as a loading element, diaphragm pressure. You build up the regulator shown in Figure 4(A).

Your theory is that the downstream pressure, as it builds up, will expand the bellows and shut off the loading pressure on the diaphragm which had been holding the restricting valve open. Then when the downstream pressure falls, the bellows will shorten and allow more pressure to flow in

on the diaphragm. More pressure on the diaphragm will push the restricting valve open and the downstream pressure will come back to the desired set point.

Beautiful! So you try it out and the darned thing doesn't work. Well, why not? All the essential elements are present.

The Bleed Hole

You study the regulator and the theory and you see right off that once you put pressure on top of the diaphragm to open the valve, you have to get rid of that pressure before the valve can close. So you decide to put a bleed hole in the top of the diaphragm casing to bleed the pressure off when the measuring element bellows tells the diaphragm pressure that the valve should be closed.

What if the bleed hole does continue to leak out pressure when the bellows tries to put more pressure on the diaphragm? You just make the size of the bleed hole small enough that it can't bleed pressure as fast as the bellows can let it in.

So far, so good. But even though there isn't any pressure on the diaphragm, what's to make the valve close? The weight of the diaphragm, the valve stem and other parts are tending to hold the valve open. Well, how about the upstream pressure against the bottom of the valve? No good. You can't depend on it. It can be troublesome, as it was in the case of the spring loaded regulator you built before.

You look around and see a spring lying on the bench and the

idea of using a spring to close the valve comes to you. Now, as long as you are rebuilding your regulator anyway, you might as well get rid of that trouble you had with the single seated globe valve. So you choose instead a double ported valve as the restricting element. In the double ported valve, the high upstream pressure tries to open and close the valve at the same time and thus balances itself out.

You rebuild your regulator and Figure 4(B) represents the results of your work. The basic theory is the same as 4(A) but you have added a bleed hole for the loading pressure and a spring under the diaphragm to make the regulator spring closing, and changed to a balanced type of inner valve.

Will it work? Sure. It works like a charm. Before you turn the upstream gas in, the bellows is short and allows pressure to build up on the diaphragm. This diaphragm pressure overcomes the spring and forces the restricting valve open so that some of the

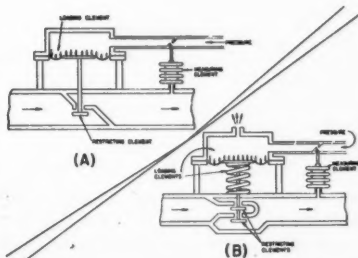


Figure 4—Improved Regulator

upstream gas gets through to build up downstream pressure. The bellows measures the increasing downstream pressure and gradually expands to choke off the pressure going to the diaphragm.

With no more pressure being added to the diaphragm, the diaphragm pressure leaks out through the bleed hole and the spring closes the restricting element valve. Then, as the downstream pressure falls, the bellows responds to cause a greater diaphragm loading pressure. The restricting valve opens a little, and the downstream pressure settles down to a steady value.

You give this regulator the works. It takes it and likes it. About the only limitations you discover are the flow capacity of the restricting valve and the ability of the bellows to withstand high downstream pressures. You remedy this by using whatever size of restricting valve is necessary and substitute a bourdon tube (which can take pressures up to 10,000 pounds) for the bellows.

Fourth Element Added

But haven't you overlooked something? Didn't you add a fourth element when you stuck in the spring as you did? What has happened to our three element regulators?

A little thought will reveal that the spring is only reverse loading added to overcome the loading which the weight of the moving parts added. It also serves to make regulator closing action more positive. Thus, while some of the loading is in reverse, it is still loading

and we find in the regulator of Figure 4(B) three loading elements — pressure, weight and spring. But the regulator is still a basic three element regulator—measuring, restricting and loading.

"The Proportional Band"

Another thing your tests reveal about this regulator in Figure 4(B) is that it, like the spring loaded regulator in Figure 3, delivers a somewhat lower downstream pressure each time flow increases. Again the restricting element assumes a certain position for every rate of flow and downstream pressure.

In the case of the Figure 4(B) regulator, however, the drop in downstream pressure from no flow to full flow is very much less. This would indicate that a smaller change in downstream pressure is required to cause the restricting element to open up further to take care of the new flow condition. Your regulator in Figure 4(B) may be said to have a "proportional band" which is narrow as compared to the regulator in Figure 3.

As long as we are talking about the experimental regulator in Figure 4(B), let's take a look at one of its commercial versions in Figure 5(A). Still better, look at Figure 5(B) where the commercial version is shown in simplified schematic form. The measuring element is the bourdon tube, the restricting element a double ported balanced valve and the loading elements are diaphragm pressure,

spring force and weight of moving parts.

As downstream pressure increases, it tries to straighten out the bourdon tube and in doing so takes the flapper away from the diaphragm pressure bleed hole. As the flapper moves away from the bleed hole, diaphragm pressure falls, allowing the spring to start to close the restricting element and bring the downstream pressure back down again.

In case downstream pressure starts to fall too low, the bourdon tube lets the flapper close off the bleed hole and the diaphragm pressure builds up to push open the restricting element.

As might be expected, there is an orifice (just back of the bleed

justment features for changing downstream pressure, proportional band, etc.

You will note the use of a pressure regulator in the pressure line to the diaphragm. You have already had experience with the breaking of diaphragms with excess pressure on the second regulator you built. So, the little auxiliary regulator limits the diaphragm pressure in case the flapper is held up against the bleed hole.

Another Commercial Regulator

It might be well now to look at another commercial version of a regulator since it would be impractical to use the one shown in Figure 5(A) for every application. While it is a beautiful piece of equipment and can be made to do almost any job that comes along, there are a great many applications where its high quality and precision performance are neither needed nor wanted. Take a service regulator for example, of the type you install on the domestic customer's premises.

The service regulator must be safe, dependable and not too expensive. You have to build a lot of regulator and still not ask very much money for it. The inlet pressures are not very high and the flow capacity required is not very great.

Let's take a look at a regulator built almost exclusively for gas service installation. Such a regulator is shown in Figure 6(A). Just by looking at the outline of the regulator, you can now tell

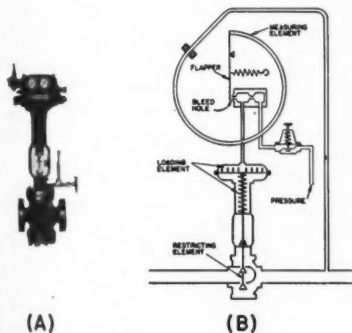


Figure 5—The Commercial Version

hole) in the pressure line to the diaphragm which is too small to pass as much gas as the bleed hole when the flapper is pulled away. Also, as might be expected, the commercial version actually has ad-

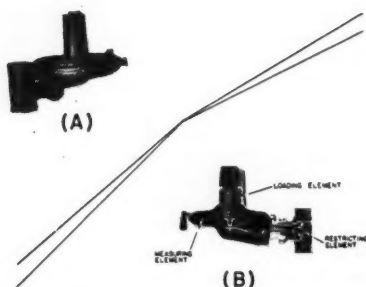


Figure 6—Another Commercial Version

that the measuring element is a diaphragm. Also by the hump on the upper diaphragm casing, you can tell that the loading element is a spring. You can't tell what the restricting element is like until you look inside or look at a cut-away sketch such as Figure 6(B).

There you see that the restricting element is a single seated valve with a composition disc for the 100% shutoff required of a good gas service regulator. You also see that there is a powerful lever linkage between the diaphragm and the restricting valve. Basically, this is the same as the first spring loaded regulator you built.

In this regulator is built a feature not seen in any of the previous regulators. This feature is the little curved pitot tube reaching from the chamber beneath the diaphragm to a point in the downstream gas passage. This point is one which has been chosen because, as gas flow increases past it, the pressure there falls through venturi action.

This artificially low pressure is

the one measured by the diaphragm. The diaphragm, thinking things are worse pressure-wise than they actually are, calls for a wider open restricting element and we wind up with a regulator with a "rising characteristic."

Downstream Pressure Constant

As flow increases you would normally expect the outlet pressures to fall; this feature causes the downstream pressure to remain quite constant or even rise a little. As you will agree, this characteristic is a fine one and overcomes the drooping tendency noted on the spring loaded regulator you first built.

We could go ahead and build a number of interesting gas regulators. We could use pressure instead of a spring as the loading element in the regulator just discussed in Figure 5(A). We could work in such improvements as built-in relief valves and automatic failing pressure shutoffs. A lot of possibilities open up.

First, however, let's take another look at the regulators we've already built. As a result of that look, we find that the weight loaded regulator we built second in Figure 2(B) has something in common with the spring loaded regulator in Figure 3 and with the last regulator we looked at in Figure 6(B). All three can be labeled "self-operated," since they all get the energy necessary to open or close the restricting element from the gas flowing through the line.

On the other hand, the first

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regulator you built, the small boy regulator in Figure 2(A), and the improved regulator you built with a bellows measuring element in Figure 4(B) have something in common. They both amplify or supplement the energy of the measuring element in order to open or close the restricting element. They both can be labelled "relay-operated." As a matter of fact, any gas regulator can be classified as either self-operated or relay-operated. This is an interesting point.

You have two tools with which to sort out the essential elements of any regulator you run across. First, you can determine whether the regulator is self- or relay-operated—that tells you a lot of things. Second, you can break your regulator down into three essential elements — measuring, restricting and loading. By the time you have done this, there isn't much you don't know in a practical way about the regulator.

Detailed Study Needed

If you want to go on from here, your best approach would be to study each one of the elements in detail. What are its characteristics, its limitations, its advantages and its relative merits?

Spring behavior, for example, is intensely interesting. Weight and lever combinations have not been discussed as loading elements. What are their drawbacks? You can devote hours, months, years or a lifetime to the subject if you care to but you can get 99% of all you'll actually need as an operat-

ing gas man with only a limited amount of study.

Take diaphragms, for example. You will find that the most important characteristics are flexibility, strength and resistance to the action of gas and air. Not only must the diaphragm have these good characteristics to begin with but it must also be able to maintain them for a long time. A number of materials such as Neoprene, Buna-N, Hycar, etc., or other rubberlike synthetics are widely used, ordinarily strengthened by a fabric insert.

Effective Diaphragm Area

Having once selected the material, the area of the diaphragm to use is an important factor. Experience has shown that, when you fasten a diaphragm down in a diaphragm casing, you don't get the use of the entire area exposed to pressure. You only obtain what is known as an "effective area" enclosed by a circle halfway between the inside edge of the diaphragm casing and the outer edge of the diaphragm plate. Thus you must size your diaphragm taking this fact into account.

When you come to springs, you will find that the "rate" of the spring is an important characteristic. The usual spring employed in regulators has the faculty of compressing or shortening its length in equal steps. A given spring of a certain "rate" will shorten $\frac{1}{2}$ " if subjected to 5 pounds force. Add another 5 pounds and it shortens another $\frac{1}{2}$ ". Thus a total of 10 pounds shortened it 1 inch. Add another 10 pounds and it shortens

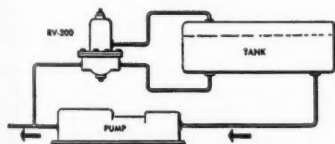
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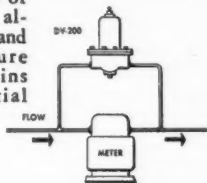
RV-200 Series

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another inch. Take off 5 pounds and it lengthens $\frac{1}{2}$ ". As you might expect, this spring has a rate of 10 pounds or is known as a "10-pound spring."

If you select the diaphragm as the measuring element and the spring as the loading element as in the service regulator in Figure 6(B), the spring rate must be such as to cooperate properly with a diaphragm of the size fixed upon.

Let us say that your diaphragm has an effective area of 10 square inches and that you are trying to control the outlet pressure at a set point of 1 pound. When the outlet pressure is at this set point of 1 pound, 10 square inches times 1 pound or 10 pounds is the force measured by the diaphragm.

Your spring, let us say, has a 10-pound rate and is, therefore, compressed 1 inch in imposing the balancing 10 pounds load. Then when flow increases and it is necessary to open the restricting valve to maintain downstream pressure, the diaphragm measures the decreased downstream pressure and "tells" the spring to open the restricting element a little.

Positioning Action

This means that the spring extends itself to a greater length and is not exerting a 10-pound load any more but something less, such as 9½ pounds. When equilibrium is reached, the restricting element is open wider to permit more flow but the downstream pressure is only .95 pounds instead of 1 pound. Why? Because your loading has decreased to 9½ pounds and the ef-

fective area of the diaphragm, or 10 square inches, divided into the 9½-pound loading gives a measured pressure of only .95 pounds. This is interesting because it illustrates what is known as "positioning" action in which there is a definite relation between the downstream pressure and the position of the restricting element. Thus, you will find that, whenever a spring is used for part or all of the loading element, there will be at least some positioning action.

Overcoming Off-Set

This accounts for the deviations from the set-point which we noted previously and which occur with a spring loaded regulator when the flow changes. Such a deviation is called an "off-set." Off-set may be overcome by some such means as the pitot tube employed in the gas service regulator illustrated in Figure 6(B).

Or it may be reduced or increased at will by the use of a relay operated regulator which can amplify the measurement it makes to apply loading. You will recall the narrow proportional band obtained with your bellows measuring element.

Some regulators do not have "off-sets." Such a regulator is the one you built with weight loading illustrated in Figure 2(B). No spring is employed and the force exerted by the weight does not change as the restricting element is opened or closed. Theoretically, the downstream pressure is the same regardless of flow. Essentially the same may be said of the

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lever and weight loaded regulator in Figure 2(C).

What these weight loaded regulators have, rather than "off-set," is "error." This error is introduced by friction of moving parts, resistance of the diaphragm to change and in the case of the lever and weight loading, the angularity of the lever arm. The combined effects of all these introduce error but they must be present to prevent "hunting" on the part of the regulator.

Floating Action Control

As you can see from Figure 2(B) or (C), the moving parts float to produce a floating action type of control. If no friction were present, the moving parts would float right on past the set-point when correcting a change in downstream pressure. Then they would float right back past again, still hunting but never settling on the desired set-point.

Have you ever seen a weight and lever loaded regulator hunt or oscillate? Sometimes this is so violent as to throw the weights off the lever arm. So a little friction is necessary to absorb the energy of the oscillations. This accounts for the fact that "error" exists in downstream pressure in "floating" action regulators.

Completely pressure loaded regulators or "pressure balanced" regulators have floating action but are relatively stable and need less friction since they do not have the inertia effect introduced by weight loading and have the damping action obtained by compressible

gases. It is, however, necessary to dampen out cycling which can be set up and this is ordinarily done by restrictions in control line passages to introduce a slowing down of reaction time.

Hunting or cycling can, of course, occur in spring loaded regulators and is avoided by damping, introduction of demand side capacity, and proper valve size selection. This brings up the subject of valve selection. This subject has been touched upon lightly in substituting a double ported valve for a single ported valve to get away from unbalance in the fourth regulator we built.

Valves for Many Services

Needless to say, many factors enter into valve selection and many, many shapes, sizes and materials are available for various desired characteristics. Valves may be had for quick opening service, throttling service, 100% shutoff service, corrosive service and so on.

Once you have selected the type of valve you want, sizing is almost always done from capacity charts provided by most manufacturers. The purely mathematical approach to valve sizing is impractical because of the odd valve shapes involved and the laborious computations required.

As you get further into a study of gas regulators, vast new fields of interest open up. There are countless articles and books on the mysteries involved and you are respectfully referred to them for more detailed discussion.

Helping the Users Helps Entire Industry

THE search for a comprehensive, concise set of customer instructions has occupied virtually all segments of the LP-Gas industry for several years. Just what the customer should and must be told to keep him cautious but unafraid of LP-Gas has been a subject of a measure of controversy and considerable confusion.

The problem is this: (1) The customer should be instructed as to possible malfunctions of his LP-Gas system and appliances—as would be necessary when using any fuel, but (2) these instructions should not alarm him as to any imagined "threat" of accident or give him the fallacious impression that LP-Gas is a dangerous commodity to use in the home.

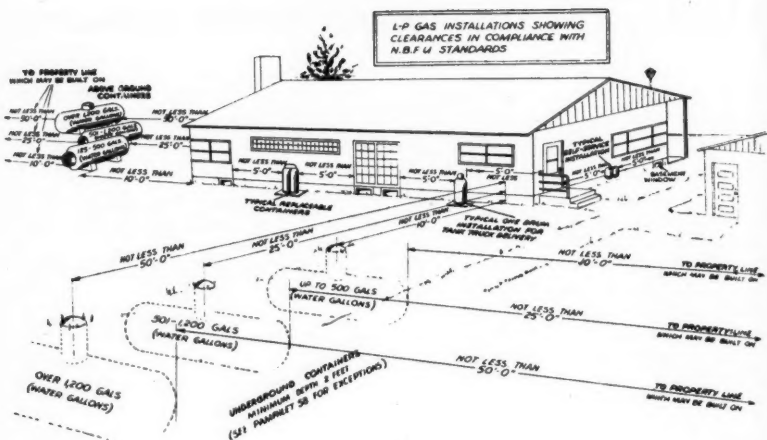
There have been many attempts at finding the happy middleground that will accomplish the desired effect. On these pages, *BUTANE-PROPANE News* presents a composite of several plans which have come to the attention of the editors. This composite was made from suggestions of Hartford (Conn.) Accident & Indemnity Co.; National Butane-Propane Assn.; John E. Cronin, inspector of oils for the state of Colorado; John E. Persons, Saline Butane Co., Grand Saline, Texas; division of industrial safety, state of California; Charles R. Pfeffer, safety supervisor, United States Fidelity & Guaranty Co., Atlanta, Ga.; and Arkansas Butane News.

LP-Gas, like any gaseous fuel, is a valuable servant that can provide comfort, convenience, and efficiency—and all it requires in return is common-sense safe handling. If improperly or carelessly used or handled, LP-Gas becomes dangerous—as do matches, gasoline, electricity, cleaning solvents, or cigarette lighter fluid.

Here are some rules and reminders that will keep LP-Gas a safe, dependable servant for the householder:

The Installation

1. Be sure that your dealer is a qualified distributor of LP-Gas and LP-Gas appliances.
2. Be sure that installing servicemen have credentials.
3. Be sure that servicemen test for leaks by pressure-testing all pipes at a gauge pressure of at least 30 lbs. for a period of at least 30 minutes. All appliances should be tested at 1 lb. pressure for at least 15 minutes.
4. Be sure you know where all off-on valves and controls are located.
5. Be sure a cut-off valve is installed on house piping behind cooking range. Have range connected to house piping valve by means of an approved connector.
6. Be sure that all appliances and various equipment were designed for LP-Gas use, and that they bear the seal of approval of either the American Gas Assn. or Underwriters Laboratories, Inc.
7. Be sure that your LP-Gas tank is at least 10 ft. from the house (if 500 gals. or less); 25 ft. (if 500-1200 gals.), and 50 ft. (if larger than 1200 gals.). Cylinders may be installed against the house but should be on firm, cement foundations and at least 5 ft. laterally from any openings.
8. Know how to read the tank gauge. Know how the gas regulator keeps pressure low in the house.
9. Be sure to learn proper size of flame when using appliances. LP-Gas



A visual interpretation of "legal" settings of cylinders and tanks according to NBFU 58. Prepared by John Knox Smith.

has high heating value, operates well with a small flame.

10. Be sure that water heater is properly vented to open air. Be sure it has a shutoff cock nearby on the house piping. Do not install it in bedroom or bathroom.

Safe Use of LP-Gas and LP-Gas Appliances

1. LP-Gas is odorized so that leaks are easily detected.
2. LP-Gas is heavier than air, will settle to the floor of a room when it leaks.
3. Never check for leaks with a match, since LP-Gas is flammable. If a leak is suspected, the area in doubt can be brushed with soapsuds—bubbling means that there is a leak.
4. If a leak is present, shut off all gas valves, including tank valves,

open doors and windows to disperse gas, and call your dealer. Don't turn on any electric outlets; there may be a spark.

5. Allow only a bonded dealer's serviceman to handle or adjust your LP-Gas appliances or equipment. Always ask to see his credentials.

6. In lighting stove or cooking range, always light match first. Then slowly open gas valve, holding match $\frac{1}{2}$ in. above burner.

7. Never go to sleep with a heater operating in the same room. Never adjust a heater to such a low flame that it might extinguish itself.

8. If your tank runs out of gas, turn off all valves and call your LP-Gas dealer.

9. Do not allow weeds to grow around your tank. Do not throw rubbish near your tank. Never use an

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with accent on greater safety, longer life and low-haul cost-per-mile. High tensile steel and indented fittings assure a superior safety factor. Light weight, low center of gravity, large capacity pump and valves, allow you higher payloads. A needle bearing universal joint with square shaft allows axial movement of shaft which increases the life of the joint.

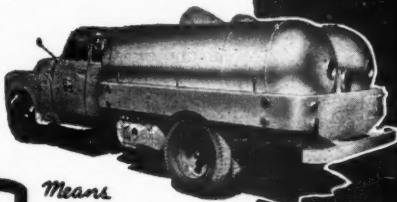
These are just a few of the reasons why the LMC Home Delivery Unit is a money-maker for you! Put it to work for you soon!

TRANSPORT
TANKS

DOMESTIC
TANKS

STORAGE
TANKS

SKID
TANKS



**THIS
NAME**
LMC
LUBBOCK MACHINE CO., INC.

Means
**Low
Mileage
Cost**

LUBBOCK MACHINE CO., INC.

Lubbock, Texas, Ph. 4631, Box 1138

open fire or electrical equipment near your tank.

10. Do not place clothes or paper near heaters.

11. When turning off gas, be sure valve is **completely** closed.

12. See that you have a 100% automatic safety valve on water heater, and range oven if it has an automatic pilot.

13. Do not install any additional appliances yourself. Ask your dealer to do this.

14. Do not use an appliance made for natural gas or any other fuel unless converted according to manufacturer's instructions.

15. See that your system is installed properly by a licensed butane dealer only. All outside piping should be buried at least 2 ft. deep; all piping underneath the house should slope back toward the line coming out of the ground; and all piping underneath the house should be well supported so that there will be no traps in the line. Be sure that your house is well ventilated underneath on all sides.

16. See that your room heaters are connected securely with approved connectors. When cutting off the heater, first turn it off at the wall cock, and then at the heater. In lighting it, reverse the procedure, but always having a match lighted first.

Bottled Gas Corp. of Virginia Names New Director of Sales

Appointment of C. P. Humphries, formerly manager of the company's Brandy, Va., division, as director of sales of the Bottled Gas Corp. of Virginia has been announced by E. O. N. Williams, president.

Mr. Humphries made an outstanding record in his work at the Brandy of-

fice, according to President Williams, and comes to his new position with 30 years' experience in selling, including work as southeastern sales manager of the Kelvinator Corp. and as sales manager of the building products division of Reynolds Metals Co.

New Yorkers Applaud Gas

By ED TITUS

The financial community in New York was given a rapid-fire and dramatic story of what the LP-Gas in-

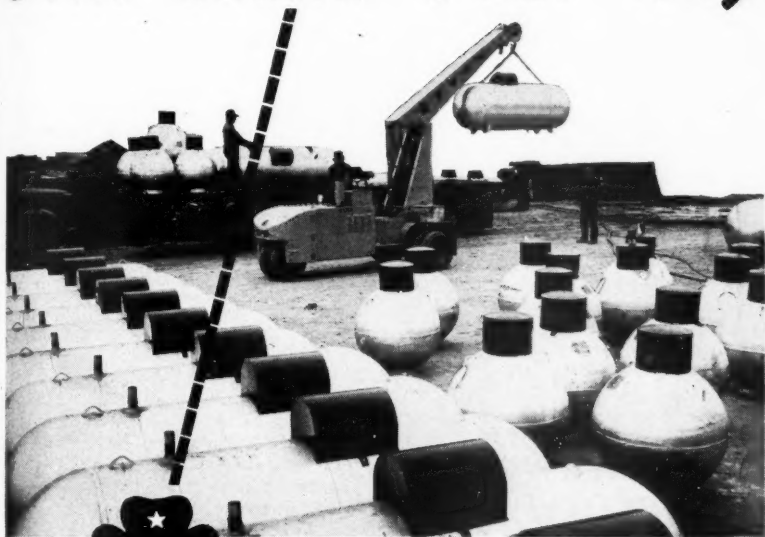


MARK ANTON

dustry is all about on Dec. 20, when Mark Anton, president, and other executives of Suburban Propane Gas Corp. appeared at a luncheon of the New York Society of Security Analysts at Schwartz' restaurant, 54 Broad St.

In addition to speeches and chart presentations by Suburban Propane, the more than 100 financial experts present were treated to an electric-vs.-gas range demonstration by Marshall W. Batchelder, Chicago divisional representative of Caloric Stove Corp. This was the whistling teakettle demonstration, put on by Caloric at the GAMA exhibition in Atlantic City last October. Judging by the applause and the guffaws at the right points in Mr. Batchelder's demonstration, any myth of

Still Comin' Your Way



...FROM McNAMAR

Even though steel is critical and has slowed down production . . . we are still delivering tanks in most sizes. You can get delivery on a few of our popular sizes. Don't get caught with your tanks down . . . order your needs now from McNamar. LPG Domestic tanks from 115 gallons up.



McNamar Boiler & Tank Co.

PLANT NO. 1 — BOX 868, TULSA, OKLA. • PLANT NO. 2 — BOX 206, E. ST. LOUIS, ILL.

FEBRUARY — 1951

109

electric superiority must have been driven out of the minds of those attending.

Mr. Anton related in brief language the story of the amazing growth of the LP-Gas industry, familiar to those in the industry, but probably unfamiliar to most downtown New Yorkers unless they happen to live in the country. He also answered numerous questions.

Questions, principally of financial nature, also were answered by R. Gould Morehead, vice president and treasurer of Suburban Propane.

A. H. Cote, of Suburban Propane, reviewed the rapid development of new uses for LP-Gas, to supplement the primary use for cooking. He mentioned switch heating for the railroads, chicken brooding, the plumber's propane torch, metal cutting, tobacco curing, and, for domestic purposes, clothes dryers and incinerators.

Texas Dealers Seek Special LP-Gas Commissioner Setup

Members of the Texas Butane Dealers Assn. will put forth a determined effort in 1951 to have jurisdiction over regulation of the industry removed from the gas utilities division of the state railroad commission and placed in the hands of a special commission to be activated for that purpose. As reported in the "Texas Butane News," the association is not satisfied with the present practice, in which Texas butane dealers pay a license fee that is never used for regulation of the LP-Gas industry.

Instead, the association says, the money, purported to be in excess of \$100,000, is put into a general fund, with none of it allocated to LP-Gas

affairs. Further, the gas utilities division has no funds allocated to it whatsoever, with the result that no money is available to hire the proper inspection personnel and other agents necessary to police the industry.

The fault is neither with the railroad commission nor with its gas utility division, the Texas association reports, but with the fact that there simply is no provision in state law for using any revenue from butane operating licenses for matters pertaining to the butane industry.

Could Do Better Job

In its desire to have its industry properly regulated, so that high standards of operating practice can more easily be maintained, the Texas Butane Dealers Assn. proposes alteration of the industry regulatory status to include creation of a new LP-Gas commission, which, armed with funds taken from the annual licensing revenue, would be able to do a more complete and satisfactory job of industry supervision.

The association's public relations committee, under W. R. McCright, of Victoria, will be watching other bills expected to get legislative attention during the current session. The association will fight the "stop, look, and listen" bill which would require all LP-Gas trucks to come to a full stop at railroad tracks, thus putting the burden of responsibility upon the truck driver, and a bill which would allow the wastage of the hydrocarbons from which butane and propane are manufactured. It will sponsor a bill to stipulate specifically the types of insurance that butane dealers must carry by law, and one which would legalize increased length and weight of trucks operating on Texas highways.

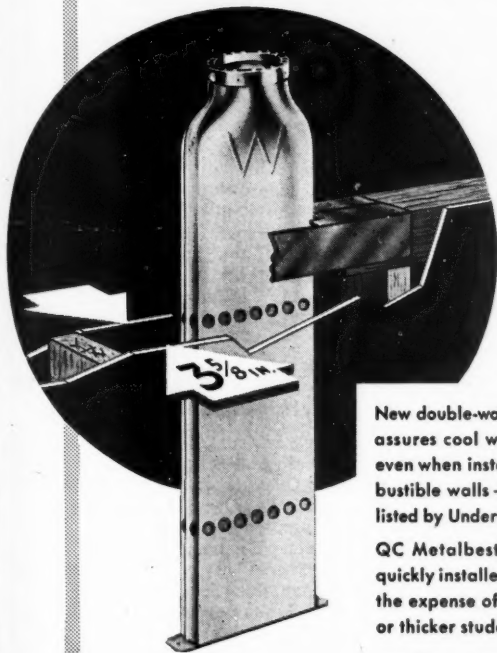
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NOW

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- **EASY**
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**QC METALBESTOS
WALL-VENT**



New double-wall, all-aluminum wall-vent assures cool walls and positive safety even when installed $\frac{3}{8}$ inch from combustible walls — a provision specifically listed by Underwriters' Laboratories, Inc.

QC Metalbestos Wall-Vent is easily, quickly installed in 2" x 4" walls without the expense of furring, metal sheathing or thicker studding.

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WILLIAM WALLACE CO.

BELMONT, CALIFORNIA





P. E. FOOTE



ED. W. DAVIES

P. E. Foote Elected President, Petrolane, Long Beach, Calif.

Election of P. E. Foote to the presidency of Petrolane, Ltd., has just been announced by the board of directors of that Long Beach, Calif., company. He succeeds the late Charles E. McCartney, founder of the organization, who died last December.

Ed Foote has been prominently identified with the petroleum industry since World War I. Much of his experience has been with the development and marketing of liquid petroleum gas, the division of the oil business with which Petrolane Ltd., is chiefly concerned. For 24 years he was associated with General Petroleum Corp., leaving them in 1943 to join the Petrolane staff.

Other officers of the company are Lowell Stanley, vice president and treasurer; Edwin D. Davies, executive vice president and general manager; Frank M. Taylor, secretary.

American Standards Assn. Adopts Cylinder Valve Code

After nearly 30 years of research into valve standards, the American Standards Assn. recently released dimensions for standard LP-Gas cyl-

inder valve inlet and outlet connections.

Recommendation of detailed dimensions for all elements of valve outlets and their connections comprise the standard which was developed by the valve thread standards committee of the Compressed Gas Assn. As their purpose, the recommended dimensions have the elimination of erroneous cross-connections between gas cylinders and outlets for different gases. To this end, the new standards specify outlet threads in four basic categories—left-hand, right-hand, internal, and external. Within these four divisions there is further differentiation—as to thread pitch and diameter.

The code covers valve thread specifications for all commercially distributed compressed gases.

Copies of the code may be had from Frank Fetherston, Compressed Gas Assn., 11 W. 42nd St., New York City.

C. C. Lamar Becomes Manager of Elkton (Md.) Gas Co.

C. C. Lamar, formerly manager of Elizabeth and Suburban Gas Co., Elizabeth City, N. C., has become manager of the Elkton (Md.) Gas Co., it was announced last month by H. Emerson Thomas, president of the parent company, Pennsylvania and Southern Gas Co.

Mr. Lamar joined Elizabeth and Suburban Gas five years ago, after a career of more than 25 years in the gas industry.

Other changes in the executive setup of Pennsylvania and Southern subsidiaries that were announced: P. C. Williams, for 29 years the manager of Elkton Gas, retired; F. Leroy Olvey, a veteran of the gas industry in Indiana and Michigan, was named new manager of Elizabeth and Suburban Gas.

NEW SUPERIOR TANK UNIT



Alert outfits like Mercury are ordering and re-ordering Superior Tank Truck and Trailer Units to insure dependable, economical fleet operation for years and years to come.

Prompt Delivery!

Superior Still Has

Steel!

Despite material shortages, we are still able to make prompt delivery on light weight, high tensile strength units built to exacting specifications.

SPECIFICATIONS

Shell—19/32" A-212 Grade "B" Firebox Steel
Heads—5/16" A-212 Grade "B" Firebox Steel
Working Pressure—250 lb. API-ASME Code
X-Rayed—Stress Relieved—Sand Blasted

TRUCK CAPACITY AND WEIGHT

Gross—3764 Gallons
87%—4342 Gallons

TRAILER CAPACITY AND WEIGHT

Gross—4991 Gallons
87%—3274 Gallons

COMBINED CAPACITY AND WEIGHT

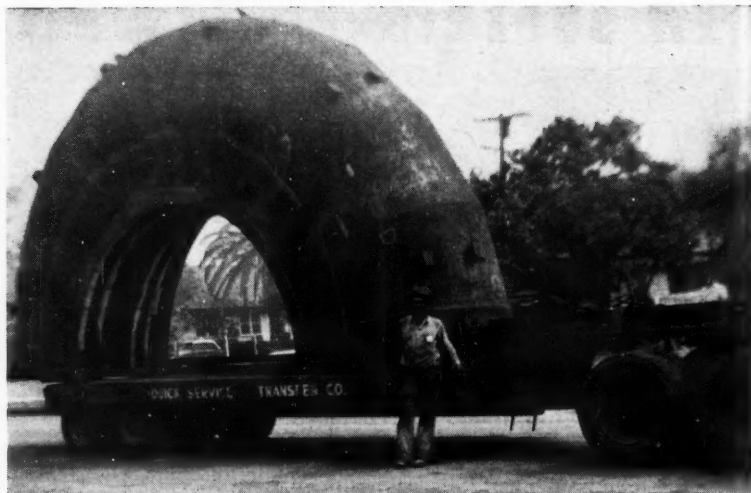
Gross—8755 Gallons
87%—7616 Gallons

Let us figure YOUR job—right now!



**SUPERIOR TANK AND
CONSTRUCTION COMPANY**

6155 S. EASTERN AVE. • LOS ANGELES 22, CALIF.



Thirty-five ton casting for Pelton water wheel, hauled by LP-Gas-fueled Autocar semi-trailer.

Dual Supply Tanks Permit Trucks To Serve Remote Areas

THE big low-bed semi-trailer, loaded with machinery, took up most of the road as its big Hall-Scott 400 engine wound the outfit up the grade below Tonopah, Nev. I cut my speed and looked the rig over as I crawled by on the wide shoulder of the highway. The gleam of fresh aluminum paint on the round ended fuel tank caught my eye, and I sought the name of the owner—Quick Service Transfer Co., Los Angeles. Here was something that would stand look-

ing into—a big, heavily loaded LP-Gas-fired truck, getting maybe 2 miles per gallon, and 150 miles beyond the last “butane” service station at Las Vegas.

Down at the office of the company, Leonard Henkey, who doubles as superintendent of equipment and office manager, gave me the story. Quick Service Transfer Co. operates 34 trucks of varying sizes out of the headquarters in Los Angeles. They do not operate on any schedules, but a large percent-

age of the business is "tariff" work between Los Angeles harbor and the various industrial and warehouse districts in the metropolitan area. In addition, they do contract hauling and transportation work which is paid for by the hour, principally with loads originating in the Los Angeles area, and destined for almost any place in California, Arizona, and Nevada.

The company has seven trucks available for the extra heavy loads and long distance operations. These run on LP-Gas, and are variously equipped to handle heavy and bulky transportation, and to facilitate loading and unloading of particular types of merchandise. They include the following:

A 1947 International with flat bed and a mono-rail loading crane, which is used principally in hauling oil-field engines and heavy machinery.

A similar International equipped with an "A-frame" crane, which is used principally for small rigging jobs and for loading heavy or bulky machinery, tanks, etc., on other trucks.

A GMC semi-trailer, vintage of 1938, which has been operating since before the war on LP-Gas, and was the first truck converted in this fleet. The total mileage on this job is now above 300,000.

Four low-bed semi-trailers in various sizes from big to huge, including the enormous International with the Hall-Scott 275 horsepower engine.

Power

The accompanying pictures show typical loads handled with some of these outfits, in addition to which they have hauled many big boilers, tanks, refinery units, oilfield production machinery, air conditioning plants, etc.

Quick Service Transfer Co. made their first LP-Gas conversion just before the war, when it appeared that gasoline would be getting scarce. The first truck, a GMC semi-trailer unit, was equipped with an "Algas" conversion, and both the original engine and carburetor equipment are still operating satisfactorily. The balance of the converted trucks are equipped with Century carburetion, and with cold manifolds which were supplied by the Nicson Engineering Co., of Los Angeles. The Hall-Scott engine was originally equipped with LP-Gas pistons and cold manifold. All of the other engines are operating with the standard gasoline compression ratios.

Because of limited space and facilities, the maintenance work on the fleet is divided. Routine service operations are carried on at the company's shop, along with such heavier work as space and facilities will permit. The overflow of heavy overhauling, and specialized service operations like air brakes and LP-Gas carburetion equipment are farmed out. Most of

By CARL ABELL



Quadruple steel hopper for building material aggregates, 12 ft. high, 14 ft. wide, 35 ft. long. Hauled by Hall-Scott-powered IHC truck with LP-Gas fuel.



The big International truck carries a 100-gal. LP-Gas tank on each side.



A yacht goes for a dry-land cruise behind an LP-Gas-powered General Motors truck.

the LP-Gas work goes to Nicson Engineering, where the trucks also get an occasional tuning up on a chassis dynamometer. By this means, the carburetors are adjusted under load for maximum power and economy, and the ignition timing is set for the highest possible performance. Maintenance cost on all seven of the LP-Gas systems is low, the bills running only a few dollars per month.

Fueling has to be done at service stations, as the company does not have sufficient space at either of their two storage lots for the trucks and trailers and the above-ground storage tanks which would be necessary to comply with the Los Angeles city ordinances. This is the reason only the large jobs which do most of the heavy hauling and the long distance trips have been converted. The smaller trucks spend much of their time in loading and unloading, so daily mileage is low.

If it were possible to have their own LP-Gas dispenser, Quick Service would like to have everything running on the one fuel. They like the LP-Gas operation because the oil stays cleaner, lasts longer, costs less, engine wear is less, and overhaul jobs are not required so often.

Not Enough Stations

In equipping the larger jobs which have been converted, the problem of long range operation has been a determining factor. Some of the loads go to remote destinations, and in hauling the very heavy items, speed is necessarily high. LP-Gas service stations are

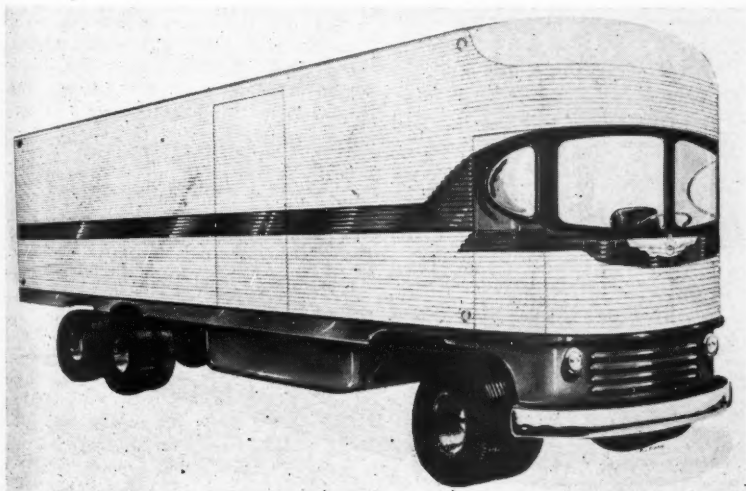
not too frequent even on the main routes, and on the less important highways there are none at all for long distances. Running out of LP-Gas on the road creates a much more serious problem than the same sad condition with gasoline. The only satisfactory cure is prevention.

Each of these long-range trucks is equipped with two big fuel tanks—one on each side. In the case of the big International, each tank holds 100 gallons. The drivers are trained to operate on the right hand tank until it is empty, then switch to the other tank, and refill both at the next LP-Gas service station. With this precautionary

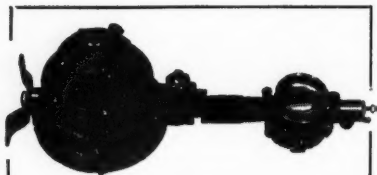
procedure and the large capacity of the tanks, there is no reason to run out of fuel anywhere that the outfit might be sent.

Officials of Quick Service Transfer Co. feel that they are doing all right with their special services made possible by their heavy duty, LP-Gas-fueled trucks. The revenue from these jobs is an important part of their annual business.

Executive personnel includes Max Henkey, president, who is now on a trip around the world, and his two sons, Fred Henkey, general manager, and Leonard Henkey, office manager and superintendent of equipment.



New propane-burning "Super-Freighter" cargo truck developed by Twin Coach Co. and Fruehauf Trailer Co.



MR. L.P.G. DEALER!

You do not disturb the gasoline set-up on your customers car or truck when you install the DIX Butane-Propane Carburetor.

Write NOW for full particulars!

Dix Manufacturing Co.

3447 E. Pico Blvd., Los Angeles 23, Calif.

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**FOR BETTER
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Stand-By Plants — Bulk Storage Plants—Carburetion and Conversion Equipment For All Internal Combustion Engines.

AMERICAN LIQUID GAS CORPORATION

**1109 Santa Fe Avenue
Los Angeles 21, Calif.**

Experience Shows Farmer LP-Gas Best Fuel

JUST about the best advertising any product can have is an unsolicited testimonial by someone who has bought it, found it valuable, and is willing to recommend it to others.

Just about the finest testimonial for LP-Gas as a tractor fuel was given in Alva, Okla., recently, when Farmer Vernon Parsons of Alva stepped into the Devery Implement Co. to buy a brand new, LP-Gas-powered Minneapolis-Moline GTB tractor. Here's what Mr. Parsons had to say about his past experience with LP-Gas as a farm fuel:

"I am one of the largest wheat farmers in and around Alva. In my work, I use three tractors: two LP-Gas UTS Minneapolis-Moline tractors and an M-M GTB tractor which is powered with gasoline. In 1942 I bought one of the first tractors ever factory-built for use with LP-Gas—an M-M UTS. This tractor has operated for nine successive seasons for me, and it still has its original pistons and valves.

Leaves Gasoline Far Behind

"I farm more than 3200 acres of wheat in western Oklahoma and Colorado, and I find that my two LP-Gas tractors operate at about one-half the cost of my gasoline tractor—which is an exceptionally thrifty model. The LP-Gas tractors are just about twice as good for my uses. With LP-Gas, which costs less to start with, my repair bills are about one-half those of the gasoline tractor, twice as much mileage per quart of oil, and 20% more power. In my experience, LP-Gas has seemed eas-

THE LP-GAS DEALER

As a fuel for engines operating generators, combines, irrigation pumps, trucks and tractors, LP-Gas is winning popularity polls across the nation. On these pages are shown a few of the fuel's many applications. The equipment was designed and manufactured by the Minneapolis-Moline Co., Minneapolis.



65 h.p. engine drives deep well turbine pump in Platt River valley, Nebraska. Factory-equipped for LP-Gas.



This 230 h.p. unit pulls a 150 k.w. Mankato generator operating

ier on the bearings and the rear end, and appears to be much cleaner.

"I will recommend LP-Gas tractors over any tractors on the market. LP-Gas is not only the best fuel from a performance standpoint, but it is a money-saver too!"

National Magazine Features Propane Carburetion

Following the publication of a feature article entitled "Propane Offers Cheap Power for Your Car" in the February, 1951, issue of "Science and Mechanics," LP-Gas carburetor manufacturers whose names and addresses were included in the text have been receiving a deluge of inquiries from all over the United States and Canada. Some manufacturers report that the inquiries have run as high as 50 per day.

While the article stated very clearly that the time is not yet ripe for wholesale conversion of passenger cars, and that for some time the major beneficiaries would be the operators of trucks, buses, tractors, and taxis, the majority of the inquiries seem to have been from private car owners.

Why Public Is Interested

The manufacturers point to several factors behind this rather astonishing display of public interest in LP-Gas carburetion. Among them are the increased familiarity with the advantages of LP-Gas to power revenue-producing automotive equipment, concern over the possibility that our increasing military activity may cause another gasoline shortage, and the personal financial stringencies caused by increased taxes and the rising cost of living. This all may indicate that the LP-Gas pump at the corner service station is closer than we think.



LP-Gas Filling Station Directory

Owners of LP-Gas filling stations all over the United States, Canada, and Mexico are urged to send information concerning their locations and services to BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 4, Calif.

These names will be compiled later in book form and distributed to trucking firms and individuals who wish to patronize such filling stations. There is no charge for such listings.

Information furnished should include station name, street address or highway number, nearest town, owner's name, and kind of services offered.

NEW JERSEY

Parsippany

Garden State Propane Gas Corp.
State Hwy 6
Open 12 hrs.
Leo Zuckerman, owner

Sussex

Tri-State Welding Supply Co.
Route 23, Sussex Highpoint Rd.
Open 24 hrs.
Roy G. Rohel, owner

NEW YORK

Washingtonville

Coleman Gas Service
Main St., Rt. 97
Open 12 hrs.
E. F. Coleman, owner

Woodridge

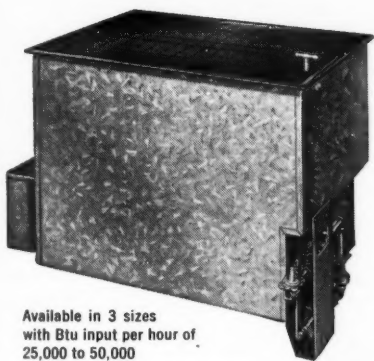
Langer Gas Service Co. Inc.
Highway Ave.
Open 24 hrs.

AMERICAN-Standard

First in heating ... first in plumbing

For small homes with or without basements

The NAVAHO Floor Furnace



Available in 3 sizes
with Btu input per hour of
25,000 to 50,000

The BUDGET Automatic Storage Water Heater

Has fuel-saving cast iron blue flame burner and precision safety controls. Correctly baffled center flue insures quick recovery. Mineral wool blanket insulation between heavy galvanized steel tank and trim jacket prevents heat loss, increases efficiency. Made in 20, 30 and 40 gallon capacities.



■ Only 27½ inches deep over-all, the Navaho can be installed easily in the floor of any small building with or without a basement and does not require excavation. Factory assembled, it is available in three sizes with a Btu input per hour of 25,000 to 50,000 and can be supplied with floor grille or dual wall register.

The Navaho Floor Furnace burns butane, propane or propane-air gas safely, efficiently and economically. Although the basic unit is furnished for manual operation, it can be converted to automatic control at any time.

Here's an opportunity to sell an American-Standard gas fired furnace for a size of home where installation of a larger furnace would be impractical or too expensive. Get complete information on the Navaho and other warm air units in the Sunbeam line from your Wholesale Distributor. **American Radiator & Standard Sanitary Corporation**, P. O. Box 1226, Pittsburgh 30, Pa.



LOOK FOR THIS

MARK OF MERIT

Serving home and industry

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS-HEATER • TONAWANDA IRON

Power Notes

Twelve propane coaches are now operating in Wichita, Kan. Bulk storage facilities of 18,000 gallons, plus dispensers, have been installed. Ten more units are on order for 1951.

Omaha & Council Bluffs Street Railway Co., Omaha, will soon operate a fleet of 117 propane Twin Coaches. Of these, 57 will be new buses and 60 will be converted from its present fleet.

Kansas City expects to have 30 new propane buses in operation soon. In addition, 117 of the old coaches will be converted.

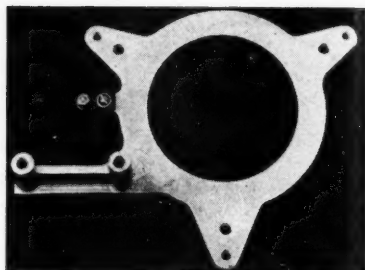
In 1950 the nation's 88,500 transit vehicles (rapid transit cars, street cars, trolley coaches, and buses) carried over 17,300,000,000 riders, according to L. J. Fageol, president, Twin Coach Co. War plant workers will probably increase this to from 19 to 25 billion in 1951.

The United States, with about 6% of the world's population, operates 51.6% of the world's trucks and buses, according to Mack Trucks, Inc. There are 8 million trucks operating on U. S. highways today.

The first 25 Twin Coach, propane-powered coaches of the 500 ordered by the Chicago Transit Authority were delivered just before Christmas.

Regulator Mounting Bracket Simplifies Installation

A new bracket that greatly simplifies the mounting of the regulator and other control equipment of the



Specially designed bracket for mounting Century conversion equipment.

Century carburetion system has been announced as available to the industry. Named the Clark universal bracket, the new product is designed to aid conversion of gasoline-powered vehicles and stationary internal combustion engines to LP-Gas operation.

Quick bench assembly of the regulator, fuel filter, and fuel lock-off valve in advantageous relation to one another are claimed for the Clark bracket. All necessary fittings, connections, and tubing are included as a unit. Mounting the unit on the engine is made easier by a 3-point support with screw thread adjustment for bringing the regulator to a level position and locking it in place.

Brackets for fitting on specific types of tractors with special mounting problems are also currently in production. They are designed to clear obstructions formed by the design of the tractor and to hold fuel units out of the path of farm implements attached to the tractor's front end.

Further information concerning Clark Universal brackets can be obtained from R. S. Harmer Co., 2875 Cherry Ave., Long Beach, Calif.

Partial List of Contents

WHAT IS PROPANE?—Supply. Properties. Definitions.

THE BEHAVIOR OF GASES—Pressure. Specific Gravity. Density. Compression.

WHAT GOES ON IN A PROPANE CYLINDER? Construction. Filling.

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APPLIANCE CONVERSIONS — Inputs for Domestic, Commercial and Industrial Burners.

FACTS ABOUT WATER AND WATER HEATERS—The Effects of Water on Heaters. Usage Tables.

TYPES OF WATER HEATERS—Installation. Safety Devices. Efficiency.

DEALERS, SALESMEN, SERVICEMEN

Are you closing the door to future sales by giving incomplete answers to your prospect's questions? Can you compare butane-propane costs and safety with electricity in your area?

BUILD YOUR FUTURE EARNINGS BY LEARNING THE FACTS TODAY. The Bottled Gas Manual provides 352 pages of easy-to-read information on selling and servicing LP-Gas and appliances.

Order Your Copy Today

Price is \$4.00 per copy. We pay postage on orders accompanied by check or money order. In Calif. add 15c for sales tax.

BUTANE-PROPANE News

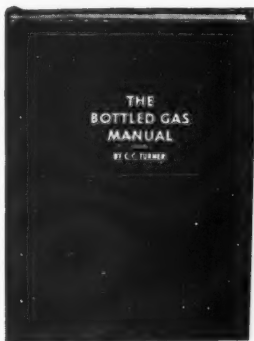
198 S. Alvarado, Los Angeles 4, Calif.

LP-GAS PIPE LINES—Friction. Sizes. Formulas. Charts.

TESTING FOR LEAKS AND ADJUSTING BURNERS—Flame Characteristics. Servicing.

FUNDAMENTALS OF THERMOSTATS — Types. Service. Expansion of matter under heat.

PILOTS AND PILOT CONTROLS—Types. Causes of Failure. Adjustment. Safety Pilots.



THE BOTTLED GAS MANUAL

SELECTING AND INSTALLING WATER HEATERS—Demand Analysis. High Bill Complaints. Service Problems. Peak Demands.

COMPETITIVE FUELS — WOOD, COAL, OIL. Heat Content. Efficiency. Competitive Figures.

COMPETITIVE FUELS — ELECTRICITY — Rates and Refrigeration. Meeting Electrical Competition.

COMPETITIVE FUELS—ELECTRICITY—COOKING AND WATER HEATING — Operating Costs. Fire Hazards. Relative Merits.

GAS LIGHTING—Law Governing Transmission of Light. Relative Costs. Value to Industry.

SPACE HEATING — Estimated Requirements. Proper Sizes. Types of Heating Equipment.

THE TOOLS OF OUR PROFESSION

LP-Gas Authority Speaks On SAE Annual Program

M. J. Samuelson, Minneapolis-Moline engineer, addressed the Society of Automotive Engineers annual meeting held Jan. 8-12 at Detroit. His subject, "Comparative Operating Data of Tractors Using Gasoline or Liquefied Petroleum Gas Fuel," was part of an opening day symposium—"Liquefied Petroleum Gas as Tractor and Automotive Fuel." Other speakers in this panel included R. C. Alden and F. E. Selim, of Phillips Petroleum Co., and A. J. St. George, of Ensign Carburetor Co.

Mr. Samuelson was one of the MM company engineers instrumental in producing the Minneapolis-Moline original factory-built LP-Gas tractors



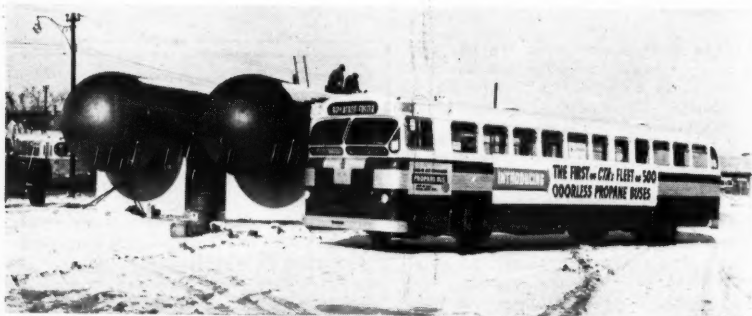
M. J. SAMUELSON

that have been in production since 1941. His address is scheduled for the Milwaukee SAE Chapter on March 2 and he spoke at the Kansas State LP-Gas Engine Fuel Service School conducted by Kansas State College Jan. 23, and sponsored by the Liquefied Petroleum Gas Assn.

L. E. Rasmussen Named Sales Manager, Rapid Thermogas

L. E. Rasmussen is the new sales manager of Rapid Thermogas Co. of Des Moines, Iowa, according to an announcement from Charles O. Russell, president of the firm.

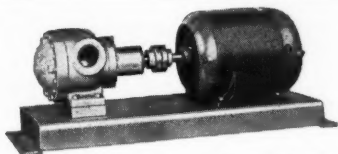
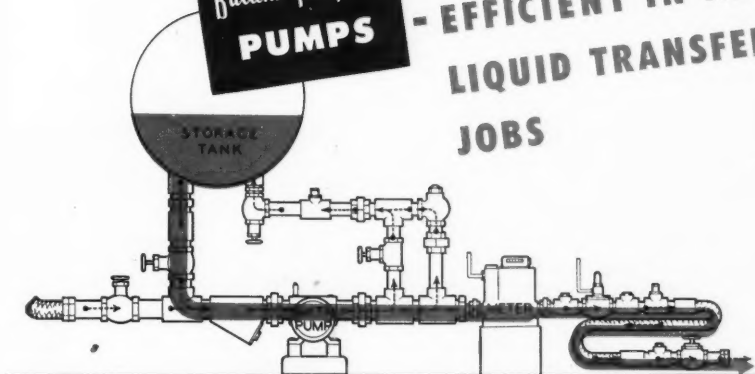
Mr. Rasmussen has been active in the LP-Gas industry for many years having been with Phillips Petroleum Co. in the Philgas division for 14 years and for five years with City Gas Service, Wisconsin Rapids, Wis. He is past president of the Wisconsin LP-Gas Assn. and a past member of the technical standards, safety, and legislative committees of the Liquefied Petroleum Gas Assn.



Bulk storage plant and one of the first propane buses to be delivered in Chicago. Each tank holds 15,000 gallons of propane gas.

SMITH PRECISION Butane-Propane PUMPS

- EFFICIENT IN ALL
LIQUID TRANSFER
JOBS



Solving your LPG pumping problem is our single objective. Among the 14 models of Smith pumps, you will find one with the highest operating efficiency in any range of the following services:



Units for direct connection to standard 1800 rpm explosion-proof motors — no outside belt, chain or gear drives • For truck-transport unloading • For loading delivery trucks • For fast filling of cylinders on a manifold • For filling fuel tanks of trucks and other motor vehicles • For filling single small tanks • For tank car unloading • For direct connection to truck power take-off drive at 500 to 900 rpm.

The drawing reproduced above details an actual installation where a Smith pump is used both for unloading transports into storage and for filling truck fuel tanks and other small tanks from storage through a liquid meter — a simple and very satisfactory layout. A Smith pump can do a similar job for you, and will give years of trouble-free service, when properly installed.

Blueprints of this installation, including list of materials and operating instructions, are available. Write also for new catalog sheets and price information.

SMITH PRECISION PRODUCTS COMPANY

1135 MISSION STREET • SOUTH PASADENA • CALIFORNIA • PHONE PYRAMID 12293

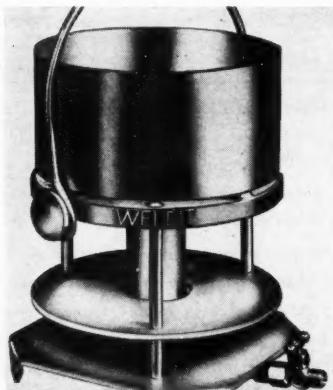
Products

Melting Furnace

Weldit, Inc., 990 Oakman Blvd.,
Detroit 6.

Model: No. 500.

Description: This new Weldit furnace is constructed of steel and cast



Weldit Furnace

iron. It melts 25 lbs. of lead in $4\frac{1}{2}$ minutes. It is adjustable to maintain temperatures, burning 15 hours full blast or with intermittent melts. Sustaining flame burns up to 60 hours. No gas regulator is required. The new furnace can be used with remote fuel service if desired. The LP-Gas tank can be located any distance from the furnace.



Universal Kitchenette Range

Kitchenette Range

Cribben & Sexton Co., 700 N. Sacramento Blvd., Chicago.

Model: Gotham Universal.

Description: One of the four new ranges for 1951 introduced by Cribben & Sexton is this kitchenette range. Only 21 in. wide, this is a complete range with features that include a large, full-size, 17-in. oven and 17-in. broiler with "whirlpool" broiler pan. Its top burners are the simmer type with a keep-warm setting.

Other new models are the Eton, the

Manhattan, and the Amherst. All are available factory-equipped for LP-Gas.

Domestic Range

Tennessee Stove Works, Chattanooga, Tenn.

Model: Modern Maid.

Description: Especially designed for LP-Gas, this range features center-simmer burners, automatic oven ignition with 100% shutoff, and oven-



Tennessee Modern Maid

control-by-clock. The new design incorporates a massive backguard with a streamlined front. It has two giant and two regular burners, individual drip pans, and recessed manifold cover for cooler gas cock handles.

Domestic Range

Crown Stove Works, Chicago, Ill.

Description: Features of the company's new line of gas ranges include backguard with lamp, electric clock-timer, nameplate, and chrome vent strips; color when desired by



Crown Range

the customer; and an entirely concealed base. All burners have center-simmer feature. The oven has top-center flue to assure heat circulation, even browning, and thorough cooking for baking, roasting, and complete oven meals.

Product Information

Production of ranges with AGA-approved automatic ignition of oven and burner pilots is contemplated for February by the Tappan Stove Co., of Mansfield, Ohio, after results of extensive field tests have been studied. Termed "Coolite," this method of ignition for top burners and oven eliminates constantly burning pilots.

Operation: By turning the top burner valve, a circuit is closed which causes a small coil to glow and ignite the pilot which in turn ignites the burner. When the pilot is lighted, the circuit supplying power to the coil is broken. In the oven operation, when the valve is turned, the pilot heats

the thermocouple on the safety shut-off which in turn lights the oven.

According to Tappan officials, Coolite will probably be available on one model and in limited quantities.

Listing of its internal safety valves for LP-Gas tank discharging by Underwriters Laboratories, Inc., has been announced by **Shand & Jurs Co.**, Berkeley, Calif. The valve is normally held closed by spring tension and can be opened only by hydraulic pressure supplied by the "operator" which is actually a hydraulic pump. When hydraulic pressure is released, any open valve will close tightly and instantly.

Should discharge or hydraulic lines be torn away, pressure holding any valve open is automatically released, allowing that valve to close. In case of a nearby fire, tiny fusible plugs inserted in the hydraulic lines melt, releasing pressure which in turn closes any open valve.

A new gas range, bearing the trademarks "Acorn" and "Oriole," has been added to the line of products made by Perfection Stove Co.

The newcomer is the Model 5012, a divided top range, 36 inches wide, and with two giant and two standard simmer-control, non-clog burners.

A banquet size oven is featured, along with a roll-out broiler drawer. There's an automatic top burner lighter and automatic oven control. A large storage compartment, divided into two sections, provides extra space for pots and pans.

Front, top and sides of the Model 5012 are finished in titanium porcelain enamel, which results in a much whiter coat of enamel, with less tendency to mar and scratch during use.

Surface Combustion Bulletins Cover Heating Operations

Several new bulletins have been issued by the Surface Combustion Corp. All are available by writing to the company at Toledo 1, Ohio.

Bulletin SC-149 describes pit-type furnaces for controlled atmosphere heat treatment. It presents a complete description of the application of batch-type furnaces.

"Heat Treat Review" is the title of a new publication designed to present current technical and operating information on heat treating metallurgy and practice. The bulletin, to be published periodically for persons concerned with heat treating operations, is intended to provide up to date information on heat treating processes as applied to all phases of the metal-working field.

The complete line of Surface standard atmosphere furnaces is described in Bulletin SC-148. The applications of each of these furnaces to modern, controlled atmosphere heat treating are described in detail.

Minneapolis-Honeywell Catalog

New technical literature issued recently by Minneapolis - Honeywell Regulator Co. is designated Specification Sheet No. 194 and describes the operation of the "Electr-O-Line" relay. This is a position-proportioning relay with automatic reset. General specifications of the relay are given and photographs and diagrams illustrate the text.

The sheet is available from the Brown Instrument Division of the company, Wayne & Roberts Aves., Philadelphia 44, Pa.

out of This World... **ROPER**

"America's Finest Gas Range"

● A Complete Line of Beautiful
New 1951 Roper Models

● An Outstanding New National and
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Here it is!
ROPER for '51. An extensive,
well-balanced line of "heavenly" new
gas ranges. Backed by 60,000,000 national
consumer advertising messages. Stimulated further
by an abundance of attractive promotional material for your use.

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Offices and Showrooms in Principal Distribution Centers

AVERAGE TEMPERATURE BY SEASON

GEOGRAPHIC LOCATION	WINTER	SPRING	SUMMER	FALL
	Jan.—Feb.—Mar.	Apr.—May—June	July—Aug.—Sept.	Oct.—Nov.—Dec.
NEW ENGLAND				
Connecticut	27	59	71	42
Maine	24	53	67	39
Massachusetts	29	58	70	43
New Hampshire	20	53	66	36
Rhode Island	29	58	71	43
Vermont	19	43	68	37
MIDDLE ATLANTIC				
New Jersey	34	58	72	46
New York	24	59	71	51
Pennsylvania	31	62	73	44
SOUTH ATLANTIC				
Delaware	36	64	75	46
Florida	58	75	82	62
Georgia	46	70	78	62
Maryland	36	65	76	47
North Carolina	39	63	72	46
South Carolina	48	72	80	54
Virginia	40	67	76	49
Washington, D. C.	36	64	76	46
West Virginia	34	63	74	44
EAST NORTH CENTRAL				
Illinois	28	62	73	39
Indiana	31	63	74	56
Michigan	24	58	70	38
Ohio	31	62	73	42
Wisconsin	20	58	70	35
EAST SOUTH CENTRAL				
Alabama	54	74	82	59
Kentucky	37	66	77	46
Mississippi	52	73	81	57
Tennessee	45	67	76	48
WEST NORTH CENTRAL				
Iowa	26	61	74	39
Kansas	32	64	78	44
Minnesota	16	58	71	33
Missouri	36	64	77	46
Nebraska	28	59	73	37
North Dakota	8	52	66	25
South Dakota	24	54	70	36
WEST SOUTH CENTRAL				
Arkansas	45	70	80	52
Louisiana	51	73	83	56
Oklahoma	42	68	82	50
Texas	49	72	84	56
MOUNTAIN STATES				
Arizona	53	74	85	57
Colorado	33	57	71	40
Idaho	34	58	73	41
Montana	24	48	62	31
Nevada	36	55	69	41
New Mexico	39	63	74	44
Utah	33	59	74	38
Wyoming	27	50	66	35
PACIFIC STATES				
California	50	64	73	54
Oregon	43	56	67	46
Washington	42	55	64	45

This seasonal temperature chart has been prepared by the Reznor Manufacturing Co. for help to dealers in selling heating installations. It is based upon U. S. Weather Bureau statistics.

Handy Binder

for **BUTANE-PROPANE**
News



A beautiful DeLuxe Binder made especially for your favorite magazine. Holds 12 copies—one full year. Magazines can be inserted or taken out in a second's time, or bound permanently for future reference. Covered with long-lasting, maroon Du Pont Fabrikoid with the name BUTANE-PROPANE *News* stamped in gold on cover and backbone. You'll be proud of these beautiful binders. \$2.00 each, post paid. Get extra binders for past files. Send them to your friends as gifts.

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Add 3% Sales Tax for California orders, and 3½% Sales Tax for Los Angeles City orders

BUTANE-PROPANE News • 198 S. Alvarado St., Los Angeles, 4, Calif.



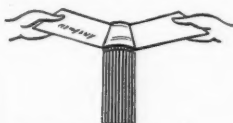
BOUND IN A FLASH

Slip open magazine under elastic band and it's bound firmly into place. Can be removed just as quickly.



OPENS FLAT

The curved backbone and patented binding system allow each magazine and page to open flat.



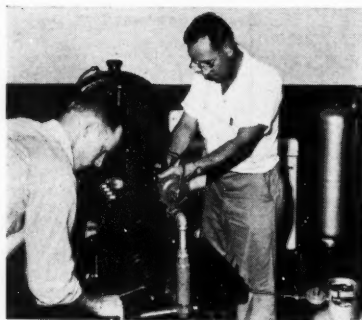
BINDS SECURELY

Patented Elasto Cord supports weight of each magazine separately, no mechanical devices to get out of order.



FOR PERMANENT BINDING

Plexon plastic covered wire and instructions supplied with each binder. Replaces elastic cord for permanent binding.



Gasoline engines are converted to burn propane in one department of the Southern Technical Institute LP Gas course.

New Course at Southern Tech Starts Last Week in March

Registrations are now being accepted for the new class in gas technology that will start the last week in March at Southern Technical Institute (Chamblee, Ga.), it has been announced by John D. Sewell, assistant director.

Supported and counselled by LPGAs, the LP-Gas training activities of Southern Tech are designed to prepare young men for careers in the production, marketing, or manufacturing phases of the industry. Veterans of World War II may take the course under GI Bill auspices, and many industrial organizations offer scholarships for the training to their employees.

Canada Adopts Controls On Appliance Term Sales

A provincial counterpart to the U. S. government's Regulation W on credit controls has been passed by the Canadian legislature. Canada

voted the similar action effective Nov. 1, 1950.

Under terms of the restriction, a 20% down payment must be made on purchase of all gas appliances, with 18 months as the maximum maturity period.

Suburban Propane Corp. Buys Gas Plant in Ohio

Suburban Propane Gas Corp. has made its first purchase of a property outside the area of the Atlantic Coast states which up to now have constituted its field of operation.

The acquisition of the liquefied petroleum gas properties of the Barnesville Development Co., Barnesville, Ohio, marks expansion of the company into the eastern edge of the Middle West. It is the first step by Suburban Propane into an area not immediately adjacent to its present marketing territory.

In making the announcement, Mark Anton, president of Suburban Propane, stated the purchase includes more than 3200 customers in 11 counties of southeastern Ohio. It is one of the larger Suburban Propane's purchases in the last year.

The transaction includes two bulk storage plants, one at Barnesville and the other at Dover. It also includes all vehicles and equipment plus office and showroom facilities at the Dover installation.

New Service School Scheduled for Iowa State in 1951

C. L. Crippen, Rapid Thermogas Co., headed an arrangements committee that met Jan. 4 in Des Moines, Iowa, to draft plans for a new LP-Gas service school to be held next summer on the campus of Iowa State College at Ames, sponsored by the LPGAs.

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SINCE 1906

LPG TRANSFER COMPRESSOR

The earning power of a Brunner LPG Compressor is limited only by the volume of business you do!

In every LP gas transfer, vapors are left in the "emptied" tank...vapors that could run as much as 5% of the gallonage. Brunner LPG Compressors, doing the transfer pumping,

liquify and recover these vapors. Knowing the volume you handle, you can quickly figure what this 5% can mean in dollars and cents as a *loss* or as an *extra earning*.



LP GAS UNIT
A complete guide for the operator
of a Brunner LPG Transfer Compressor
Brunner Manufacturing Company
Utica, N. Y., U. S. A.

Brunner Manufacturing Company
Utica 1, N. Y., U. S. A.

Send the LPG Compressor booklet to:

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Company _____

Address _____

City and State _____

FREE—This booklet has been used by scores of operators as a guide to setting up a transfer plant. Diagrams and charts cover wiring, piping, valving. It also contains a "trouble-shooting" section on LPG transfer problems. Here is a coupon request...we urge you to use it.

BRUNNER MANUFACTURING COMPANY, UTICA 1, N. Y., U. S. A.

The Trade



CECIL DUNN

Election of Cecil M. Dunn as secretary - treasurer of the Institute of Cooking and Heating Appliance Manufacturers, Washington, D. C., has been announced by Samuel Duncel, managing director of the Institute.

This Institute is a national association of manufacturers of gas and electric ranges and gas, coal and oil space heaters, including also suppliers of components.

Mr. Dunn is vice president and general manager of The Estate Stove Co., a subsidiary of Noma Electric Corp., Hamilton, Ohio.

Merger of two of the nation's prominent manufacturers of gas ranges was completed recently.

The announcement was made jointly by A. P. Tappan, president of the Tappan Stove Co., Mansfield, O., and D. P. O'Keefe, president of O'Keefe and Merritt, Los Angeles.

Officials of both companies state that the merger will not result in any change in personnel or the present methods of distribution. The chief immediate benefit of the merger is the exchange of engineering and manufacturing information.

The combined engineering and production facilities are expected to play an important role in defense production during the current emergency.

Both companies will remain autonomous and will continue to operate exactly as in the past. Mr. O'Keefe will continue as president of O'Keefe and Merritt, and Mr. Tappan as president of the Tappan Stove Company. No change of officers of either company is anticipated.

The appointment of H. W. Geyer as director of the West Coast research and development laboratory of the Robertshaw-Fulton Controls Co., is announced by T. T. Arden, executive vice president.

Mr. Geyer is well known for his many years of service with the Southern Counties Gas Co. of California in charge of utilization, laboratory tests, customer service and the training of utility servicemen. Mr. Geyer previously served the Philadelphia Gas Works Co. as industrial fuel engineer.

Mr. Geyer succeeds S. G. Eskin, who is transferring to the executive offices of the Robertshaw-Fulton Controls Company at Greensburg, Pennsylvania to serve in the capacity of technical advisor.

Perfection Stove Co., Cleveland, has recently employed seven sales and service engineers, one for each of its

national sales districts. They will handle Perfection range and heater service inquiries and problems in their respective sales districts.

The new engineers and districts in which they will operate are: Gordon Benner, Kansas City; LeRoy Erickson, St. Paul; Donald Davisson, Oakland, Calif.; Robert Morningstar, Chicago; Harry Munkel, Jersey City; John Gatalder, Cleveland; and Robert Fuller, Atlanta.

James R. Thomas, father of Ross W. Thomas of Phillips Petroleum Co., Bartlesville, Okla.; H. Emerson Thomas, of Fuelite Natural Gas Corp., Pennsylvania and Southern Gas Co. and other companies, Westfield, N. J., and Harry R. Thomas of Stanolind Oil and Gas Co., Tulsa, died after a long illness at the age of 77 in Oklahoma City on Dec. 7.

Mr. Thomas had been one of the original oil drillers and producers in the southwest and built and operated some of the first casinghead gasoline plants ever built. His son Ross' first business activity was in the construction of these plants. H. Emerson Thomas was first initiated into casinghead gasoline operation, working in these plants during summer vacations from school. Casinghead gasoline production was the forerunner of LP-Gas production.

Mr. Thomas is also survived by his wife, one other son, three daughters and several grandchildren.

Two major personnel shifts were made at A. O. Smith Corp. last month. T. H. Creden, formerly Eastern district tubular products sales manager, has been named assistant manager of



A real "traffic stopper" was this Detroit-Michigan Stove Co. gas range, of the type in use 55 years ago, which was displayed in a Detroit store window for several weeks recently. For contrast, it was surrounded by modern Garland ranges with an attractive show card which pointed out the many improvements in Garland ranges in 55 years.



METER-PRINTED RECEIPTS *mean Satisfied Customers*

Yes, your customers have confidence in the neat, accurate receipts automatically printed by Red Seal Print-O-Meters. "Human errors" are eliminated. You can even deliver L-P gas when the customer's not at home—the meter-printed ticket is positive proof.

And think how meter-printed receipts will simplify your cost accounting. Print-O-Meters save time, too, permitting your drivers to make more deliveries each day.

Let us show you how accurate Red Seal meters will improve your L-P gas profits, build satisfied customers. Ask for Bulletin 779

COMPLETE SAFETY

Red Seal L-P gas meters, designed for working pressures of 250 psi., provide complete safety in handling liquid propane.

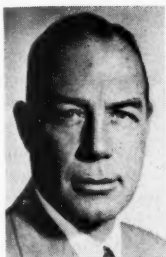


EASY REPLACEMENTS

Neptune's exclusive unit replacement plan assures prompt replacement of work-worn parts. Ample stocks on hand near you.

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PORTLAND, ORE. • SAN FRANCISCO • Canadian Factory: LONG BRANCH, ONT.



T. H. CREDEN



W. D. WOOD

the corporation's tubular division at Milwaukee. Walter D. Wood, Boston branch manager, was appointed to replace Mr. Creden in the New York headquarters.

In his new assignment Mr. Creden will aid division manager Dennis F. McCarthy, whose responsibilities have been expanded to include those of vice president and general manager of A. O. Smith Corp. of Texas, operators of a new pipe mill at Houston.

Mr. Creden has been associated with A. O. Smith since 1935, serving in the tubular sales division of the corporation in the Southwest, in Milwaukee, and, since 1947, in New York.

A. O. Smith also announced that J. J. Bohmann, coordinator of distribution and sales, will continue to serve in this capacity in the handling of customer contacts.

Edwin E. Hedene, chief engineer of Nordstrom Valve Division, Rockwell Manufacturing Co., passed away on Dec. 28 in Pittsburgh, after a short illness. He was born in New England 54 years ago.

Prior to coming to Pittsburgh, Mr. Hedene was chief engineer of the Nordstrom Valve plant in Oakland, Calif., where for the major part of his 23 years service he worked direct-

ly with Sven Nordstrom, inventor and developer of Nordstrom valves. For the past several years he has devoted his efforts to coordinating the Nordstrom engineering activities at the Pittsburgh, Hopewell, Oakland and East Chicago plants.

Dean De Graffenreid has been appointed district sales engineer for the Tulsa, Okla. office of **Byron Jackson Co.**, according to Lynn Sawyer, general manager of the pump division and vice president of the company.

Mr. De Graffenreid joined Byron Jackson Co. in 1947, as test engineer for the pump division. In March, 1948, he transferred to the sales department and was assigned to the Los Angeles branch office, his work being primarily in the oil industry of southern California. In May of last year he was assigned to the division office in Tulsa.

The LP-Gas equipment division of **The Weatherhead Co.**, Cleveland, has designated Kansas and Nebraska as a separate Weatherhead sales territory. Formerly, these states were included as part of a larger sales region.

T. V. Scott, sales manager, has appointed Willard (Bill) A. Darrow as the Weatherhead salesman to offer a more efficient service to dealers and distributors in those two states. Mr. Darrow's residence is in Wichita.

John R. Gephart, for 16 years associated with the sales department of Harrisburg Steel Corp., has opened his own business as a sales representative with offices at 100 Park Ave., New York City.

Cribben and Sexton Co., Chicago manufacturers of Universal gas ranges, announces that it has entered into a contract to purchase a plant on the outskirts of Michigan City, Ind.

The property consists of approximately 40 acres of land improved with a principal factory and office building containing about 150,000 sq. ft., as well as subsidiary buildings and railroad sidings.

Mr. W. C. Davis, president of Cribben and Sexton, stated that his firm has been awarded a prime government contract. The item will be produced in substantial quantity at the new plant and considerable man power will be required. It is expected that Michigan City people will be employed wherever possible.

Cribben and Sexton Company, one of Chicago's oldest manufacturers,

was founded 80 years ago. Their plant and foundry were originally located at Erie and Townsend Streets. In 1911 the Company moved to larger quarters at their present Sacramento Boulevard address. They quickly converted to war production during World Wars I and II. In the last war the company received the Army-Navy "E" award for proficiency in production of a wide variety of war material.

A. F. Cassidy, manager of the water heater sales division, Rheem Manufacturing Co., New York, has been elected to the chairmanship of the gas water heater division of the Gas Appliance Manufacturers Assn.

Mr. Cassidy succeeds Leland Feigel, Servel, Inc., as chairman.

Butane & Propane

Carter

Producers of high quality
Liquefied Petroleum Gases Since 1931
Wholesale Only

THE CARTER OIL COMPANY
T U L S A , O K L A H O M A



H. L. NORWAY

Harold Norway, well known in the LP-Gas industry, has returned to The Bastian-Blessing Co., Chicago, manufacturers of liquefied petroleum gas control equipment, it is announced by Ellsworth L. Mills, vice president.

Mr. Norway joins the research and development staff of which Robert E. Poethig is director and will headquarter in Chicago.

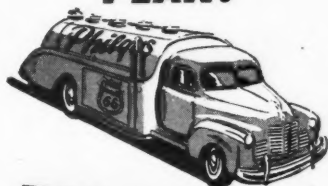
Associated with engineering and development work in the LP-Gas industry for the past 14 years, Mr. Norway has a wide background of experience in all phases of the business.

Stricken as he was leaving the golf course of Chattanooga's municipal golfing facilities, R. E. "Bob" Martin, sales manager of Herron Stove & Foundry Co., Inc., succumbed to a heart attack Dec. 17. At the time of his death, he was 50 year old.

Mr. Martin had been in the stove industry for 25 years. He was associated with The Estate Stove Co. in 1925, later served with the Norge stove division and as Jewel division manager of Detroit-Michigan Stove Co.

Prior to World War II, Mr. Martin worked as Southeast division manager of Dearborn Stove Co., Chicago. Before he joined Herron Stove last June, he was sales manager of the gas division of the Charles S. Martin Distributing Co., Atlanta, Ga.

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1. High Quality Product
2. Dependable Supply
3. Experienced Engineering
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PHILGAS DIVISION

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Offices located in Amarillo, Tex., Atlanta, Ga., Chicago, Ill., Denver, Colo., Des Moines, Ia., Detroit, Mich., Indianapolis, Ind., Kansas City, Mo., Milwaukee, Wis., Minneapolis, Minn., New York, N. Y., Omaha, Nebr., Raleigh, N. C., St. Louis, Mo., Tulsa, Okla., Wichita, Kan.

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**SELL-BUY
ANNOUNCE**

**15¢
PER
WORD**

**CLOSING
DATE
10th previous
month**

BUTANE-PROPANE News

198 S. Alvarado St.
Los Angeles 4, Calif.

The Caloric Stove Corp. has announced the election of new officers and directors effective Jan. 1.

Nathan R. Klein, former president, becomes chairman of the board. Julius Klein, heretofore vice president and sales director, becomes president, and Meyer Klein, vice president.

Other officers are: J. W. Roberts, vice president in charge of manufacturing; Harry W. Klein, treasurer, and B. Spencer Baker, secretary.

Julius Klein will continue in the executive supervision of company sales in addition to his new management responsibilities.

Three employees of the Tappan Stove Co. have been promoted to new positions with the firm, it is announced by W. R. Tappan, vice president and general manager.

J. S. LeMunyon, assistant plant superintendent, has been promoted to plant superintendent. He fills the position formerly held by W. R. Mabee, who was promoted recently to vice president and assistant general manager.

B. L. Hower, production manager, has been named assistant plant superintendent, and M. E. Houston, assistant production manager, becomes production manager.

A dealer education program which has been planned to reach 8000 key retailers of home heating equipment, will begin in February at the Cole-



JULIUS KLEIN



You Can't Afford Old Dobbin...

... and you can't afford "Horse and Buggy" Insurance in a day of specialization

Insist on specialized LP Gas Insurance from PAN AMERICAN CASUALTY COMPANY

Here are the advantages:

No. 1—Claim, safety engineering and other personnel technically trained in the "know how" of the LP Gas business to give you service available from the specialists.

No. 2—Insurance uniformly written at normal rates approved by your state insurance department—no penalties—no excess charges.

No. 3—Adequate limits of liability to protect your investment.

No. 4—Comprehensive general liability coverage freely written and recommended.

No. 5—Your insurance professionally solicited by Pan Amer. through your local insurance agent.

T. E. GAMMAGE, SR., President

BUTANE GAS INSURANCE SPECIALISTS IN 7 STATES



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2 years \$7.00 ☐

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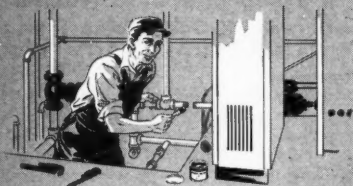
ZONE _____

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FEBRUARY — 1951

147

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TRY A FREE SAMPLE OF

"JOHN CRANE"

PLS

This Underwriters' approved compound will be the solution to all your sealing problems.



Many bulk plant operators have standardized on it . . . it saves them money by preventing costly leaks and eliminating maintenance.

PLS is an *all-purpose* sealing compound. It is insoluble in a wide variety of services, including any petroleum liquid or gas, and it seals effectively at temperatures to 550° F and pressures to 6000 psi.

PLS never hardens . . . which means easy dis-assembly even after years of service . . . on underground or outdoor connections in all weather conditions.



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CRANE PACKING COMPANY

CHICAGO

Offices in All Principal Cities in United States and Canada

man Heating Institute, Wichita, Kan.

Sponsored by the Coleman Co., Inc., in cooperation with 67 wholesale distributors of Coleman heating equipment, the program will require five years to complete and will cost in excess of \$2,000,000.

A group of 40 California and Nevada dealers will inaugurate the program, Feb. 5. A total of 1600 dealers will attend sessions this year.

Leonard J. Brower, secretary and treasurer of Bower Manufacturing Co., of Quincy, Ill., was instantly killed in an automobile accident Dec. 23, while returning from his farm to his home in Quincy. Mr. Brower turned out to avoid an oncoming car, apparently striking a soft spot in the gravel road causing the car to overturn in the ditch.

Mr. Brower has been prominent in the poultry supplies and farm equipment manufacturing industries for many years. During World War II, he served on the president's advisory board of the agricultural implement division. He was also a member of the national board of the Farm Equipment Institute of America.

Sunray Oil Corp., Tulsa, Okla., has recently leased 100 LP-Gas tank cars for transportation of liquefied petroleum gases. This company also recently purchased 200 liquid propane cars as an addition to the company transportation system.

H. W. Manley, manager of Sunray's gas and gasoline department, also headed up similar activities for the former Barnsdall Oil Co., which has been absorbed into the Sunray organization. A. V. Murray, also formerly associated with Barnsdall, is manager of product distribution for Sunray gas and gasoline department.

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Model 75

U. L. Cap. Rating.....100 cu. ft.
Delivery Pressure.....11 in. w. c.
Inlet Connections.....P. O. L.
Outlet Connections...½ in. f. pipe

Don't be caught short! Stock up TODAY with the HELCO 75 . . . specially designed for reliable day-in day-out, cold weather performance. The capacity of this regulator fits the need of all normal domestic installations.

Helco regulators are available in large quantities and LP-Gas Dealers can rely on speedy shipment.

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QUALITY L-P GASES—

Processed for complete satisfaction!

Wholesalers from North Dakota to Georgia to New Mexico know that Panoma L-P gases pay off in consumer satisfaction. Since 1938 we have produced high purity propane and butane uniform in quality and free of sulfur, moisture and residue. Our products are processed in OUR two modern plants from gas from OUR wells. We sell to wholesalers only.

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PANOMA PLANT, Hocker, Oklahoma—one of our automatically controlled plants.



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Cities Service Oil Co.

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A DEPENDABLE SOURCE
UNIFORM PRODUCTS
A CAPABLE SUPPLIER
TWENTY YEARS' EXPERIENCE

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IN LP GAS ALSO

CITIES SERVICE
MEANS
GOOD SERVICE

•

CITIES SERVICE OIL CO. (Del.)

•

BARTLESVILLE, OKLA.
CHICAGO, ILL.

Other Sales Offices

Cleveland
St. Paul

Kansas City
Toronto

R. A. Bissell, sales promotion manager, **Bryant Heater Division, Affiliated Gas Equipment Inc.**, Cleveland, was appointed chairman of the sales promotion committee, gas water heater division, **Gas Appliance Manufacturers Assn.**, it is announced by H. Leigh Whitelaw, managing director of GAMA.

Mr. Bissell served on the sales promotion committee last year and was active in the "Court of Flame" automatic gas water heater campaign.

Frank P. DeLarzelere has been named sales manager of **Plastic Engineering Co.**, Tulsa, Okla., by Dan M. Byrnes, president of the company. The appointment became effective the first of December.

Plastic Engineering Co. designs and fabricates plastic items for industrial and business trade. They include in their line water monometers for the gas and LP-Gas industries, plastic LPG tanks used for demonstration purposes, a series of plastic display figures purchased by gas companies and endorsed by the American Gas Assn. They also manufacture the "Mix-O-Gas" demonstration units used by Delta Tank Manufacturing Co.

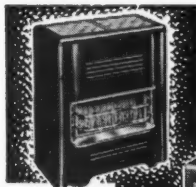
Reversing the present day movement of industry to the West Coast, **General Controls Co.**, of Glendale, Calif., manufacturers of automatic controls, is planning to build a new factory and warehouse in the Midwest, it is announced by W. A. Ray, president of the company.

The company has just completed the purchase of a 4½ acre site in Skokie, Ill., located just a few miles north of Chicago, and construction is expected to begin early in 1951.

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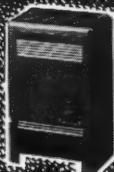
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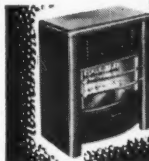


Vented Radiant
Circulator 30, 45
& 65,000 Btu

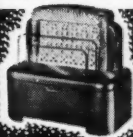
Vented Circulator
12 & 20,000 Btu



Cool Safety Cabinet
Unvented Radiant
Circulator 12, 20, 25 &
35,000 Btu



Radiant Fireplace
Model—20, 25 & 30,000 Btu



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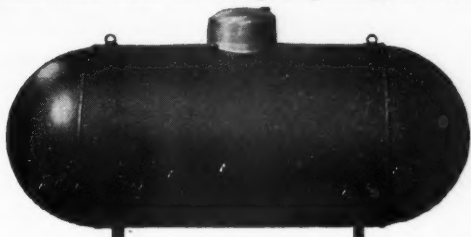
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115-250-387-500 GAL.
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ABOVEGROUND AND
BELOWGROUND
MODELS...

A *Burnham* **PRODUCT FOR THE
LP-GAS INDUSTRY...**

*For Off-the-Main Gas Service Burnham Sys-
tems Are Best in Design, Quality, Service*



Burnham Corporation

2 Main Street

BOILER DIVISION

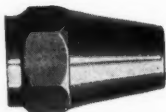
Irvinaton, N. Y.

Robert H. Nolan has been appointed Southeastern division sales promotion manager for the **Florence Stove Co.**, according to an announcement by C. P. Connally, Jr., Florence South-eastern division manager.

Mr. Nolan will work directly with Florence distributors, dealers, and salesmen in South Carolina, North Carolina, Georgia, Tennessee, Mississippi, Alabama, and Florida.

F. B. Plank, of Bartlesville, Okla., has been elected a director, vice president and secretary of **Cities Service Oil Co.**, (Del.) and **Cities Service Pipe Line Co.** effective Jan. 1, according to an announcement by A. W. Ambrose, president. He will succeed C. E. Murray, who retired on Dec. 31 after nearly half a century of employment with the Cities Service organization.

HARTWELL



For The Best In LP-Gas Fittings

Obtain the benefits of top quality,
low price and good delivery.

Write for Catalog and Price List

Hartwell Company

9035 Venice Blvd., Los Angeles 34, Cal.

The American Radiator & Standard Sanitary Corp., Pittsburgh, manufacturer of heating and plumbing products, has added a cooling unit to its line.

This cooling unit will be teamed with a regular winter air conditioner and connected to its ducts. In this way the cooling unit will provide mechanically cooled and dehumidified air.

Playing Golf May Lower Competitive Barriers

W. G. PETTY, JR., of **W. G. Petty & Son, Inc.**, butane dealers of Memphis, Tenn., takes a serious view of the need for unity among LP-Gas dealers—in the face of rising competition from other fuels, and in the name of the free exchange of information as to operating methods, safety practices, etc. He's always on the lookout for ways to insure this exchange of



W. G. PETTY, JR.

ideas and one of them he has corraled is now in practice within his own company.

On the first Monday of each month, all of the firm's salesmen and a member of the service or installation crew make on all-day project out of traveling the surrounding area to meet and talk with other LP-Gas dealers. No business is discussed—the purpose of the trips is to get acquainted, talk

From Oregon to Maine—From Florida
into Canada LP-Gas Dealers find this

BAKER Alcohol PUMP

the simple answer to moisture problems.

Holds 4 gallons of Alcohol,
is hydraulically designed
to force alcohol into any
size cylinder against any
propane-butane pressure.
This means that when a
regulator freezes up, just
take your Baker pump and
give the moisture contami-
nated tank a shot of alco-
hol and the job is done.
Many concerns are equip-
ping each delivery truck
with a Baker Pump. Eco-
nomically priced at \$39.50
complete with fittings.
Send your order today to



BAKER ENGINEERING, Malone, N. Y.



TRUCK TANKS

Twin or single barrel—Light
weight—Low in cost—Full
or semi streamlined—ASME
U69.

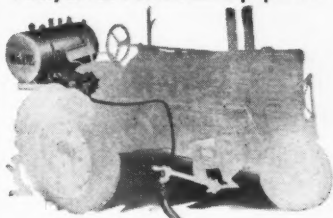
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REGO LP GAS EQUIPMENT

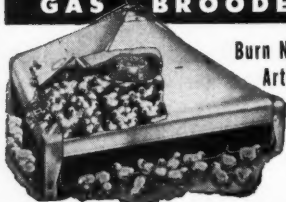
Rochester Criterion Gauges—
Aeroquip Hose and Fittings—
Anderson Flare Fittings and
Copper Tubing — Weco-Trol
(automatic control) — I C C
Cylinders.



**GAS EQUIPMENT
COMPANY, Inc.**

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Burn Natural or
Artificial Gas

SAFE—100% Shut-Off Valve

100% Shut Off Valve (Robertshaw) makes the Brover Brooder the safest on the market. Thermostat maintains even temperature. Automatic pilot light operation. Baffle plate and radiants spread heat evenly. Heat-saving insulated steel canopy with curtains, 60" x 60". Draft-proof ventilation. Adjustable legs. Thermometer. Three models including economy model with 56" canopy.

Write for catalog and low dealer prices.

BROWER MFG. CO.

430 No. 3rd

Quincy, Ill.

World's Largest Line of Poultry Supplies

DISTRIBUTORS ATTENTION!

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Butane-Propane supply, and a
more complete service all ways

...always call Calor...

the WEST'S Leading Independent Marketer
of LP-Gas

CALOR GAS COMPANY

114 Sansome Street
SAN FRANCISCO 4, CALIFORNIA
Telephone YUKon 2-3360

Serving Western America

One of the best ways for LP-Gasmen to find a sense of unity in their industry, Mr. Petty believes, is to find a common denominator that will draw them together. And the common denominator that would be most successful, Mr. Petty thinks, is golf.

Sociability Aids

"I believe," Mr. Petty avers, "that as much or more business can be transacted on the golf course as in the office—and I believe that any LP-Gas dealer can do himself a great deal of good by finding other dealers in his area and setting up a weekly schedule of golf games. The purpose, of course, is to get the dealers together—and to have them bring their problems to a sounding board consisting of other men with similar problems."

If Mr. Petty's ideas go over, dealers within an area would meet for lunch and divot-digging at least once a week. And they could bring along manufacturers representatives, suppliers, and association officials to join them. After the game, Mr. Petty thinks, everyone would be in a proper mood for a roundtable discussion of LP-Gas and how to sell it.

Mr. Petty's campaign has already started. He has managed to get W. G. Petty, Sr., T. G. Tackett (National Butane Gas Co.), and Leonard Warden, West Memphis, Ark., out on the links every Wednesday afternoon. He recounts one further step he took recently: "T. G. Hoagland, Warren Petroleum Corp., was over the other day. I asked him if he played golf, and he said he hadn't played in 10 years. I told him my plan and we were tee-ing off an hour later." Mr. Hoagland was on deck and this, Mr.

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NONE TO GOOD
FOR
YOU



REGO LP GAS EQUIPMENT

Rochester Criterion Gauges—
Aeroquip Hose and Fittings—
Weco-Trol (automatic control)
I C C Cylinders



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SUPPLY CO.**

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ATLANTA, GA.

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Department B-2

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SPRINGFIELD, MO.

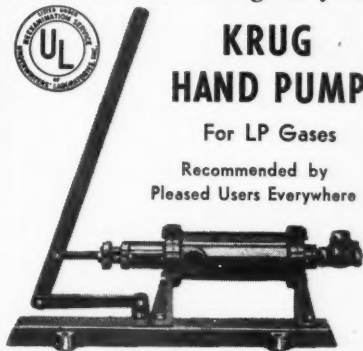
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KRUG HAND PUMP

For LP Gases

Recommended by
Pleased Users Everywhere



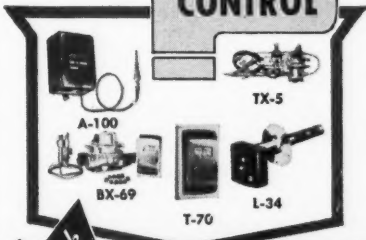
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ADAMS GRATE INSERTS

No mantle discolorations with ADAMS Grates' special construction. Superior finishes and performance.

Write for details on the complete line.

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1500 NORTH AVE., W. PITTSBURGH 33, PA.

Petty says, is the way it would work out throughout the U.S.—and dealers and manufacturers would all understand each other better.

There would seemingly be no limit as to how far this thing could go. Mr. Petty believes that after local groups—formed for golf-playing and butane-talking—were underway, the plan would eventually be expanded to the state, and later the national, level. Eventually, there would be industry-wide golf tournaments with prizes and awards.

Anyone interested in developing organizational details of such a golf group may get assistance by writing W. G. Petty Jr., P.O. Box 3835, Lamar Station, Memphis, Tenn.

1950 Was Big Year for LP-Gas Ranges and Water Heaters

Shipments of domestic gas ranges and automatic gas water heaters hit all time highs in 1950, according to the year-end summary of Gas Appliance Manufacturers Assn. statisticians, just released.

In 1950, shipments of gas ranges totaled more than 3,000,000, almost a million above the 2,069,600 the previous year. In 1949, LP-Gas ranges formed about 23.77% of the total for all of the gas industry, or about 492,000. It is expected that LP-Gas ranges formed an even higher percentage of the total during 1950.

More than 2,300,000 unit-shipments of automatic gas water heaters were reported for 1950, almost a million above the 1,466,000 units shipped in 1949. In 1949, LP-Gas fired water heaters formed about 11% of the industry total, or about 161,260 units. Here, too, it is expected that LP-Gas' percentage of the industry total in 1950 will be substantially greater than it was in 1949.